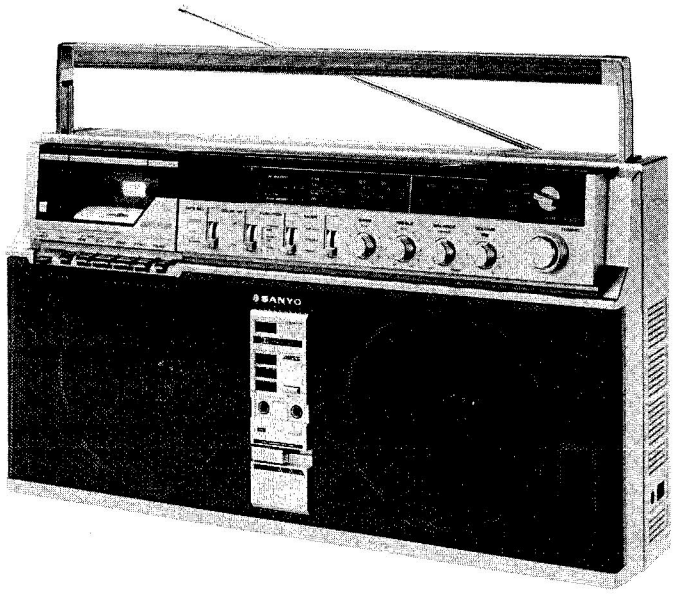
SERVICE MANUAL

SANYO

STEREO RADIO CASSETTE RECORDER

M-X650LU

EUROPE



142377 05

SPECIFICAITONS

Power Source	
AC	115V/230V (50/60Hz)
DC	13.5V (HP 2, Monozelle, R 20 x 9)
Output Power	8W x 2 (Max.)
Power Consumption	23W
Current Consumption (at Vol. Min.)	
Record mode (with Metal)	260mA
Playback mode	200mA
Fast Forward mode	220mA
Rewind mode	220mA
Recording System	AC Bias
Erasing System	AC Erasing
Tape Speed	1-7/8ips. ± 3%
Wow & Flutter	0.055% WRMS
Fast Forward Time	100sec. (with C-60)
Rewind Time	100sec. (with C-60)
Frequency Response (Overall)	
Fe_2O_3	50Hz~ 12,500Hz
CrO_2	50Hz~ 12,500Hz
Metal	50Hz~ 14,000Hz
Erase Ratio (Overall, with Fe_2O_3)	68dB
Signal to Noise Ratio (with Fe_2O_3)	50dB
Crosstalk (with Fe_2O_3)	
Track to Track	60dB
Channel Separation (with Fe_2O_3)	50dB
Harmonic Distortion (K3, with Fe_2O_3)	5%
Hum & Noise (at Vol. Min.)	−66dBs
Input Sensitivity and Impedance	
MIC.	1mV/10kΩ
DIN	0.1mV/kΩ
Output Level and Impedance	
DIN	450mV/22kΩ
Ext. Speaker	3.2Ω
Headphone	8~ 220Ω
Oscillation Frequency	69kHz
Frequency Range	
MW	525~ 1,605kHz
LW	150~ 350kHz
SW	6~ 18MHz
FM	87.5~ 108MHz

–Specifications subject to change without notice.–

WM-8143

DISASSEMBLY INSTRUCTIONS

GENERAL REMARKS

- Before disassembling the unit, spread a soft rubber mat or a cloth on the workbench to avoid scratches and grease stains.
- Do not spread anything which is likely to cause static electricity because transistors and ICs may be easily damaged by it.
- Reassemble the unit, noting the kinds of screws and the soldering and arrangement of the leads. Refer to "Circuit Diagram and Exploded Views" for correct assembly.
- Before disassembling the unit, take out the cassette tape and the batteries from it.

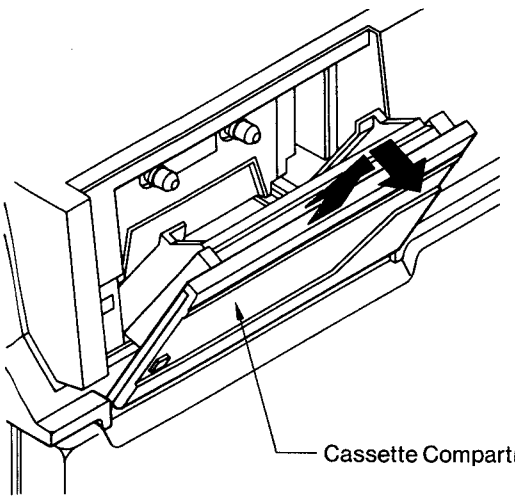
Soft-touch Mechanism

This Model adopts the soft-touch mechanism (Mechanical Logic System) which makes use of the motor rotation. This mechanism causes the following symptom because of the use of the motor rotation and the symptom shall not be considered defective.

- When the PLAY button is pressed with the batteries almost used up, the Head advances forward and stops on the way. It does not return to its original position even if the Stop button or Eject Button is pressed.
- When the above symptom is observed, the Cassette Compartment Lid cannot be opened. Be sure to open the Lid after all batteries have been replaced with new ones and then, press the Stop button or Eject button.

CASSETTE COMPARTMENT LID REMOVAL

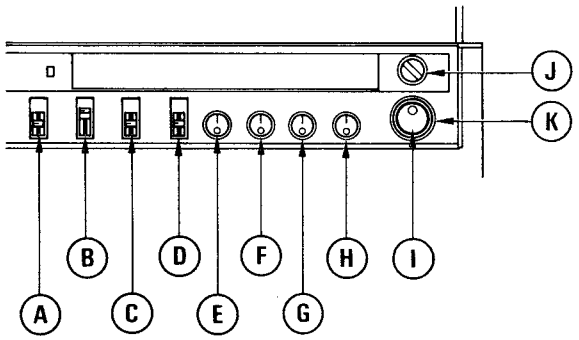
1. Open the cassette compartment lid by pressing the Eject button.
2. Slide the Cassette Compartment Lid in the direction of the arrows and detach the Lid.



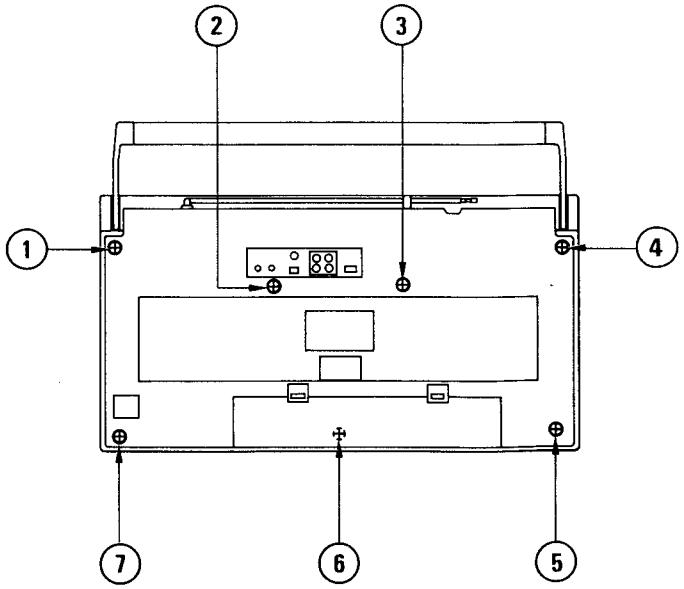
3. Reassemble in reverse order.

CABINET TOP REMOVAL

1. Detach the Cassette Compartment Lid and the following 11 Knobs (A ~ K) from the unit.
   (A) Tape Select Switch Knob
   (B) Dolby NR Switch Knob
   (C) Function Switch Knob
   (D) Mode Switch Knob
   (E) Bass Control Knob
   (F) Treble Control Knob
   (G) Balance Control Knob
   (H) Volume Control Knob
   (I) Fine Tuning Knob
   (J) Tuning Knob
   (K) Band Select Knob



2. Turn over the unit and remove the Battery Compartment Lid from the unit.
   Then, remove the seven screws (1 ~ 7) fastening the Cabinet Top.
3. Turn the unit in the upright position and remove the Cabinet Top from the unit by lifting it noting the lead wires. Then, also remove the Eject Button.



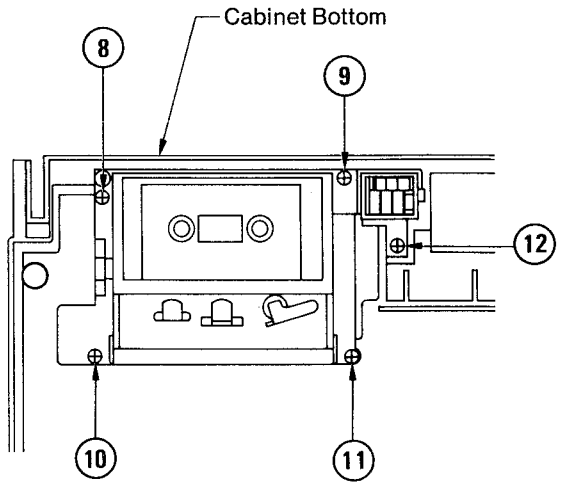
4. Reassemble in reverse order.

DISASSEMBLY INSTRUCTIONS (Continued)

MECHANISM CHASSIS REMOVAL

1. Remove the Cabinet Top by following the instructions for it and unhook the Record Wire from the Record Lever.

2. Remove the five screws (8 ~ 12) fastening the Mechanism Chassis and lift the Mechanism Chassis off the Cabinet Bottom noting lead wires.

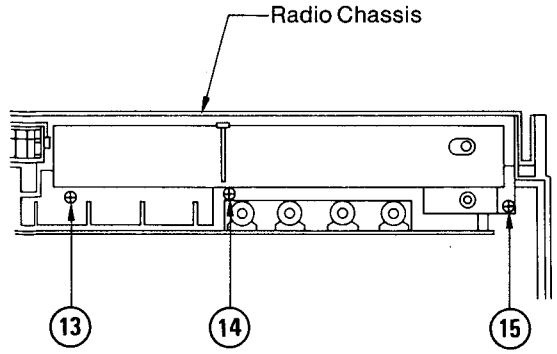


3. Reassemble in reverse order.

RADIO CHASSIS REMOVAL

1. Remove the Cabinet Top and Mechanism Chassis by following the instructions for them and disconnect the connector of the antenna lead from the Radio Tuner P.C.Board.

2. Remove the three screws (13 ~ 15) fastening the Radio Chassis and lift the Radio Chassis off the Cabinet Bottom noting the lead wires.



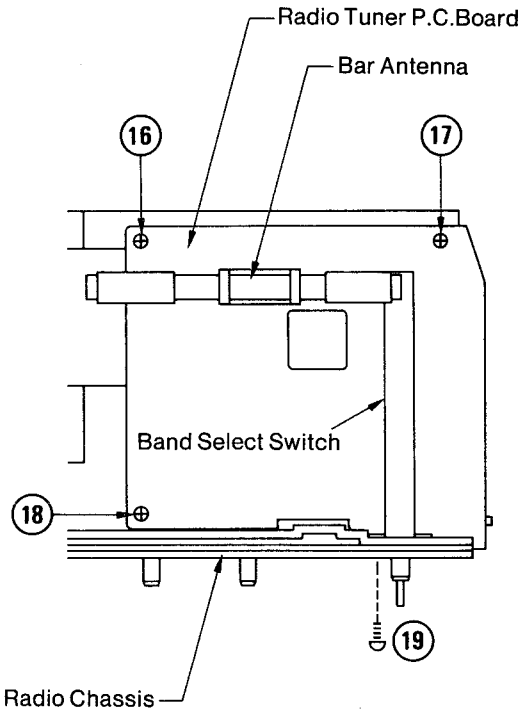
NOTE:
The Radio Tuner P.C.Board, Pre-amplifier and LED Indicator P.C.Boards are mounted on the Radio Chassis.

3. Reassemble in reverse order.

RADIO TUNER P.C.BOARD REMOVAL

1. Detach the Radio Chassis from the unit by following the instructions for it and turn the Tuning Shaft fully in an arbitraty direction.

2. Remove the three screws (16 ~ 18) fastening the P.C.Board and the screw (19) holding the Band Select Switch.
Then, remove the Radio Tuner P.C.Board by lifting its Bar Antenna side noting the Fine Tuner leads.



3. Reassemble in reverse order.

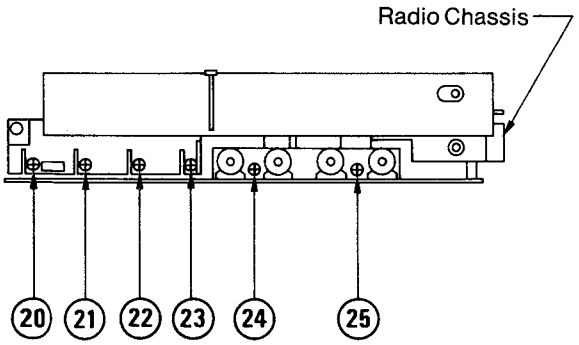
NOTE:
* Do not turn the Tuning Knob before the Tuner P.C.Board is re-mounted to the Radio Chassis.
* When the Radio Tuner P.C.Board is mounted, insert the shaft of the variable capacitor into the hole on the drum. After that, check to see that correct dial indications are obtained.

DISASSEMBLY INSTRUCTIONS (Continued)

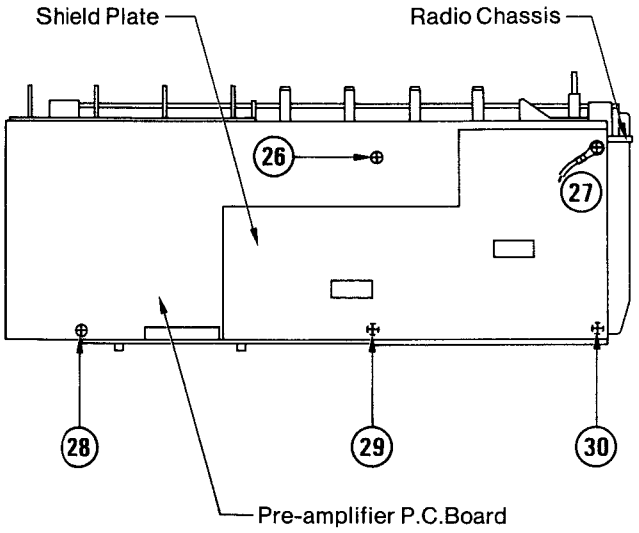
PRE-AMPLIFIER P.C.BOARD REMOVAL

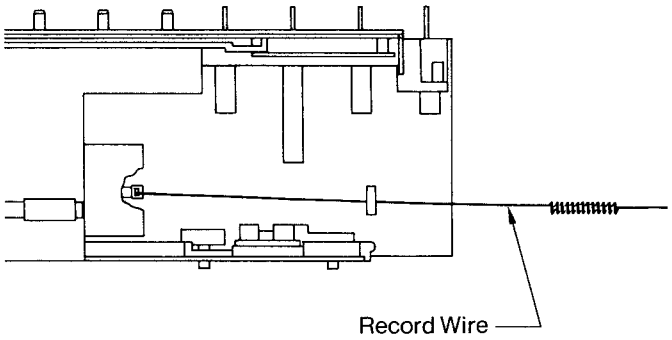
1. Detach the Radio Chassis from the unit by following the instructions for it.

2. Remove the four screws (20 ~ 23) holding the Switches, the two screws (24 and 25) holding the Volume Controls, and the four screws (26 ~ 30) fastening the P.C.Board.



Pre-amplifier P.C.Board





3. Remove the Pre-amplifier P.C.Board by lifting it, noting the lead wires. Then, also remove the Shield Plate.

4. Reassemble in reverse order.

MECHANICAL ADJUSTMENTS

EQUIPMENT REQUIRED

- Cassette-type Torquemeter (100g-cm/160g-cm)
- Silicone Grease (SHIN-ETSU SILICONE: KS-64)
- Round-nose Pliers
- Plus Screwdriver
- A Pair of Tweezers
- Paint or Glue
- Cassette Tape (C-120)

GENERAL REMARKS

1. When a repair or an adjustment work on the mechanism is performed, remove the Mechanism Chassis from the unit and supply 13.5V DC from a constant-voltage regulator to the Ext. Power Jack on the Amplifier P.C.Board.

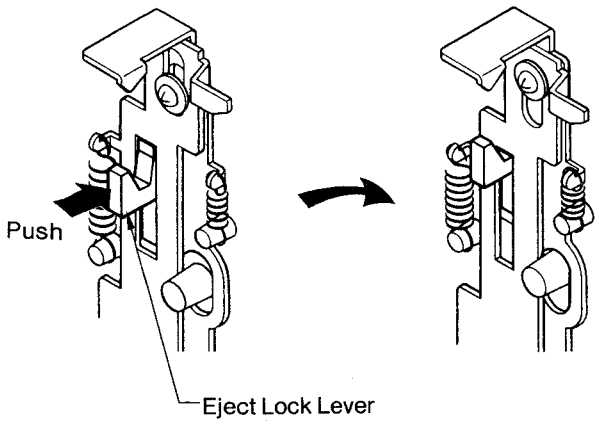
2. Before and after the mechanism adjustment, clean the tape contacting surfaces with a soft cloth soaked in alcohol.
   Trouble may occur because of oil and grease stains.
   The belts must be kept clean while the adjustments are performed.

3. Silicone grease (Example: SHIN-ETSU SILICONE KS-64) is applied to the Wind Belt to protect it from abrasion.
   If necessary, apply a little amount of silicone grease to the groove of the Fast Wind Gear.
   Then, rotate the motor to let the grease flow into the belt.
   * If silicone grease other than the specified one or its equivalent is used, the melting of the belt may be caused.
   * Silicone grease is not applied to the Replacement Belts.

4. If the Pinch Roller or Belt has quality deterioration such as scratches, replace it with a new one.

5. This Mechanism does not function when power is not supplied and any one of the buttons is pressed.

6. The Mechanism stops functioning soon when the cassette holder is opened and one of the select buttons (except for the Pause button) is pressed because the Eject Plate and the Lock Plate are locked by the Eject Lock Lever.
   If the Mechanism is required to function under this condition, push the Eject Lock Lever as illustrated, so that the Lever is released and the mechanism functions normally.

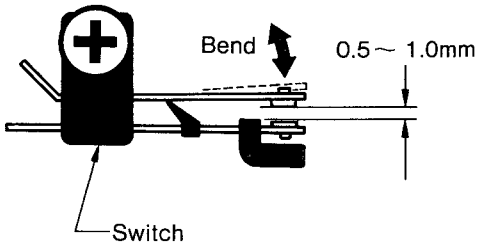


Position Adjustment of Leaf Switches

This model has the following eight leaf switches. Checking and adjustment for each switch shall be conducted in accordance with each adjusting items.
The unit should be set in the stop mode at each adjustment.

* Trigger Switch
* Motor Switch
* Pause Switch
* Play Switch
* Record Switch
* AMSS Switch
* Cue Switch
* Review Switch

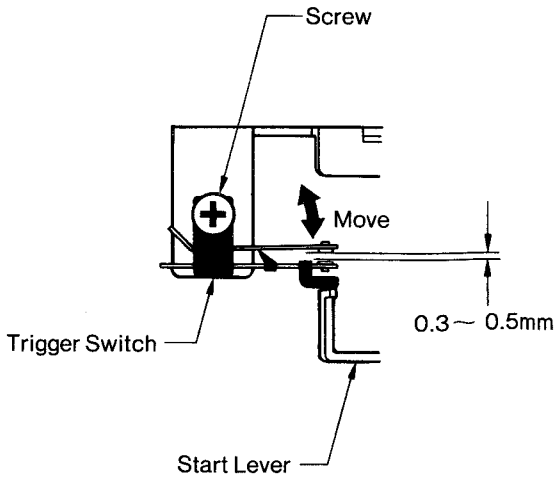
NOTE:
The clearance of the switch contacts should be 0.5 ~ 1.0mm when the Switch is not mounted on the unit. If not, adjust the clearance by carefully bending the contacts.



1. Trigger Switch

This Switch works as a trigger to make the mechanism function. When one of the select buttons (except for the Record button) is pressed, the Trigger Switch is turned on by the Start Lever, so that the Motor starts rotating. After that, this switch is turned off when the mechanism has completely finished its function.

* Check that the clearance of the switch contacts is 0.3 ~ 0.5mm with the Trigger Switch in contact with Start Lever as illustrated.

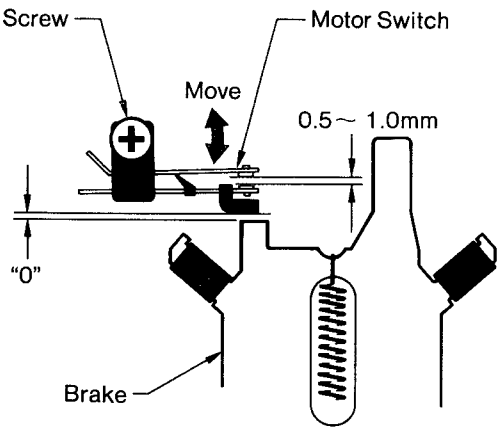


MECHANICAL ADJUSTMENTS (Continued)

2. Motor Switch

The driving motor rotates the Flywheel and the rotational force transferred by the Actuate Gear makes the mechanism function.
Then, the Motor Switch is turned on by the Brake.

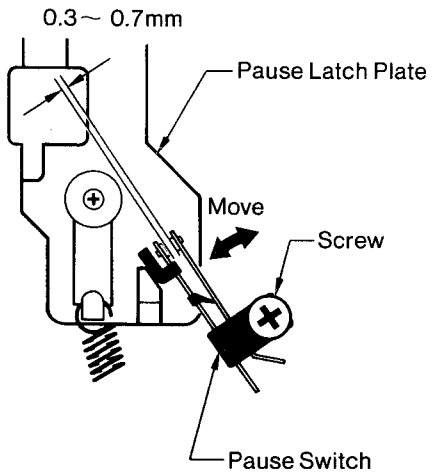
* Check that the clearance between the switch contacts is 0.5 ~ 1.0mm with the Motor Switch in contact with the Brake as illustrated.



3. Pause Switch

This Switch is used to light the LED which indicates the pause mode and is turned on or off by the Pause Latch Plate when the Pause button is pressed.

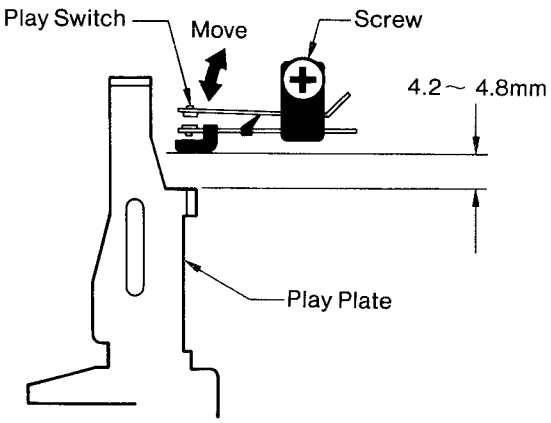
* Check that the clearance of the contacts is 0.3 ~ 0.7mm with the Pause Switch in contact with the Pause Latch Plate as illustrated.



4. Play Switch

This Switch is turned on by the Play Plate when the unit is set in the recording or playback mode, turns off the muting circuit, and lights up the LED indicating the playback mode.

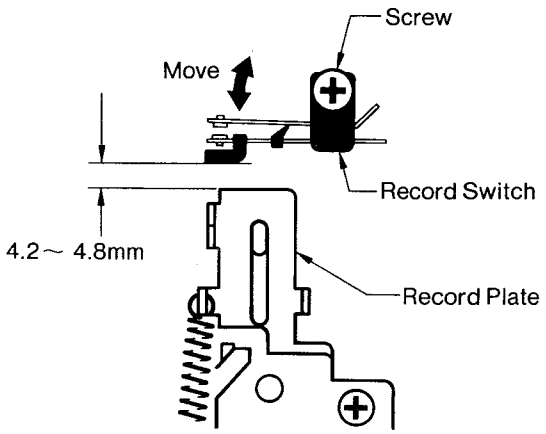
* Check that the clearance between the Play Switch and the Play Plate is 4.2 ~ 4.8mm as illustrated.



5. Record Switch

This Switch is turned on by the Record Plate when the unit is set in the recording mode, turns on the OSC circuit, and lights up the LED indicating the record mode.

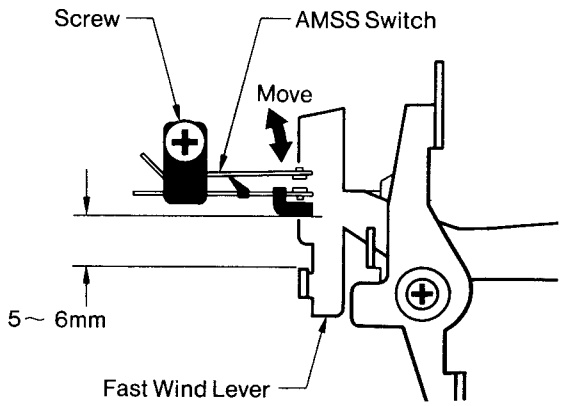
* Check that the clearance between the Record Switch and the Record Plate is 4.2 ~ 4.8mm as illustrated.



6. AMSS Switch

This Switch is turned on by the Fast Wind Lever when the unit is set in the cue or review mode by pressing the F.FWD or Rewind button in the playback mode. Then, the AMSS circuit functions.

* Check that the clearance between the AMSS Switch and the Fast Wind Lever is 5 ~ 6mm as illustrated.

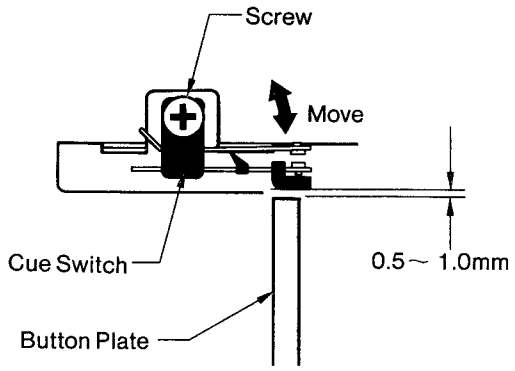


MECHANICAL ADJUSTMENTS (Continued)

7. Cue Switch

This Switch is kept on while pressed when the unit is set in the cue mode by pressing the F.FWD button in the playback mode. The solenoid keeps the unit in the cue mode as long as this switch is kept on.

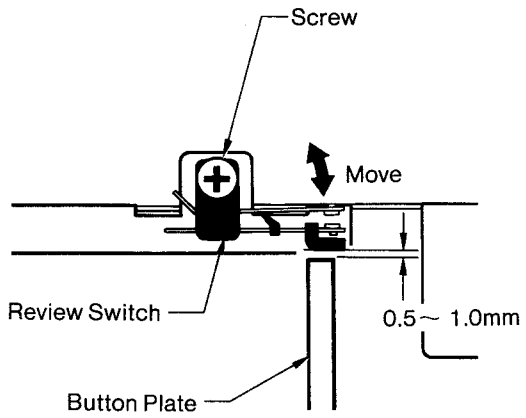
* Check that the clearance between the Cue Switch and the Button Plate is 0.5～ 1.0mm as illustrated.



8. Review Switch

This Switch is kept on while pressed when the unit is set in the review mode by pressing the Rewind button in the playback mode. The Solenoid keeps the unit in the review mode as long as this switch is kept on.

* The clearance between the Review Switch and the Button Plate is 0.5～ 1.0mm as illustrated.



Switch Adjustment

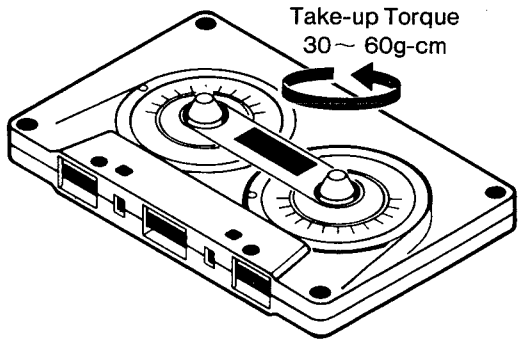
Loosen the screws fastening each switch and move the switches to the specified positions if required.

After the adjustment, tighten the screws and secure the switches with paint or glue.

TAKE-UP TORQUE

1. Insert a cassette-type torquemeter (100g-cm) into the cassette compartment and set the unit in the playback mode. Then, check that the take-up torque is 30～ 60g-cm.

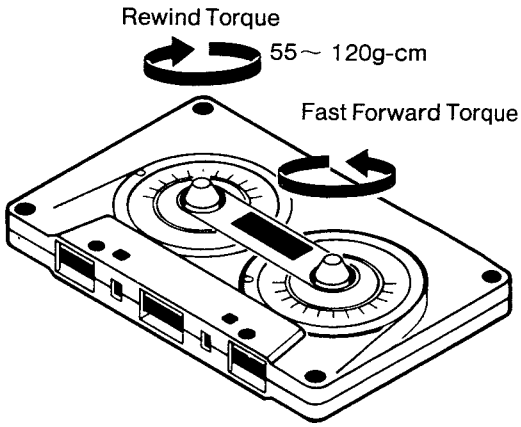
2. If not, replace the Friction with a new one.



Cassette-type Torquemeter

F.FWD AND REWIND TORQUES

1. Insert a cassette-type torquemeter (160g-cm) into the cassette compartment and measure the fast forward and rewind torques. Check that each torque is 55～ 120g-cm.



2. If more than the specified torque is obtained, apply a little amount of silicone grease (Example: KS-64) into the groove of the belt engaged in the Fast Wind Gear, rotate the Fast Wind Gear, and apply silicone grease to the Wind Belt.

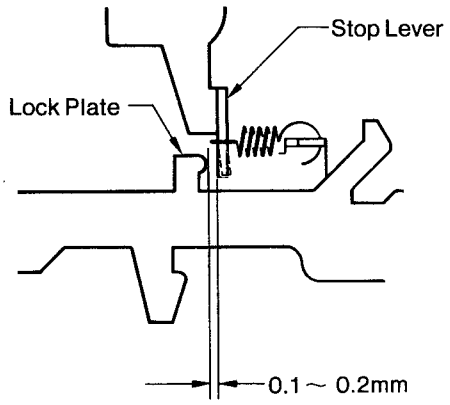
3. If less than the specified torque is obtained, replace the Wind Belt with a new one and apply a little amount of silicone grease (Example: KS-64) to the Wind Belt in the same manner as in item 2.

MECHANICAL ADJUSTMENTS (Continued)

Malfunction of Automatic Shut-off Mechanism

1. If the unit is set in the stop mode while the tape is running, check that the clearance between the Stop Lever and the Lock Plate is 0.1 ~ 0.2mm as illustrated.

2. If necessary, adjust the clearance by bending the Stop Lever as illustrated.

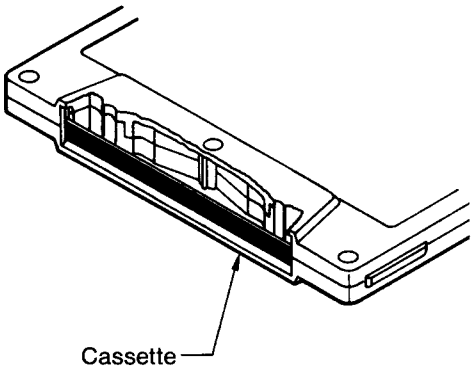


3. When the unit still malfunctions after the above adjustment, replace the Take-up Reel with a new one.

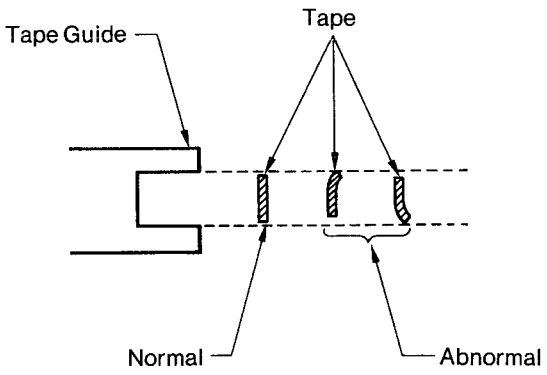
TAPE RUNNING CONDITION ADJUSTMENT

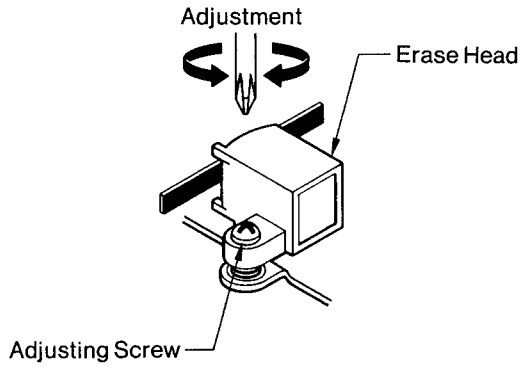
Whenever the Erase Head has been removed or replaced, perform the tape running condition adjustment as follows:

1. Cut a cassette half (Example: TDK C-120) as illustrated and use it for the adjustment.



2. Insert the cassette half into the cassette compartment. Then, turn the adjusting screw while the tape is running, so that the tape does not curl along the Tape Guide of the Erase Head as illustrated.





3. If necessary, adjust the screw until the tape is exactly centered in the Tape Guide of the Erase Head.

4. After the adjustment, secure the adjusting screw with paint or glue.

ELECTRICAL ADJUSTMENTS

EQUIPMENT REQUIRED

- VTVM (2 sets)
- Frequency Counter
- Audio Signal Generator
- Attenuator
- Dualtrace Synchroscope
- Dummy Load (470kΩ)
- DC Constant-voltage Regulator
- Test Tapes
  - * 3kHz Test Tape (Example: TEAC MTT-111) for Tape Speed Adjustment
  - * 10kHz Test Tape (Example: TEAC MTT-114) for Head Azimuth Adjustment
  - * 400Hz Test Tape for Dolby Calibration Level (Example: TEAC MTT-150) for Playback Sensitivity Adjustment
- Test Tapes for Recording and Playback Operations
  - * Normal Tape (Example: TDK AC-212)
  - * Chromium Dioxide Tape (Example: TDK AC-512)
  - * Metal Tape (Example: TDK AC-711)
- Alignment Tool

Before the Electrical Adjustment, set the unit and measuring instruments as follows:

- Tape Select Switch ..... NORMAL
- DOLBY NR Switch ..... OFF
- Function Switch ..... TAPE
- Input Select Switch ..... DIN
- OSC Switch ..... position 2
- Audio Signal Generator Output 1kHz, 0dB (1V)
- Voltage Regulator Output 13.5V

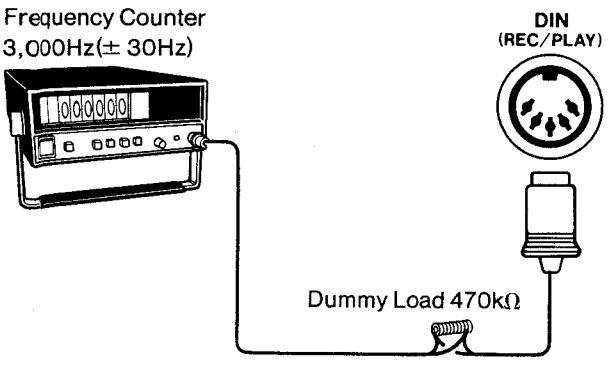
NOTE:

- * Supply 13.5V DC to the unit from the Voltage Regulator at the adjustment.
- * The Electrical Adjustment should be performed in the order as described below.

TAPE SPEED ADJUSTMENT

1. Remove the Mechanism Chassis from the unit and connect a frequency counter to the left or right channel output terminal of DIN socket (REC/PLAY) as illustrated. Then, insert a 3kHz test tape (Example: TEAC MTT-111) into the cassette compartment.

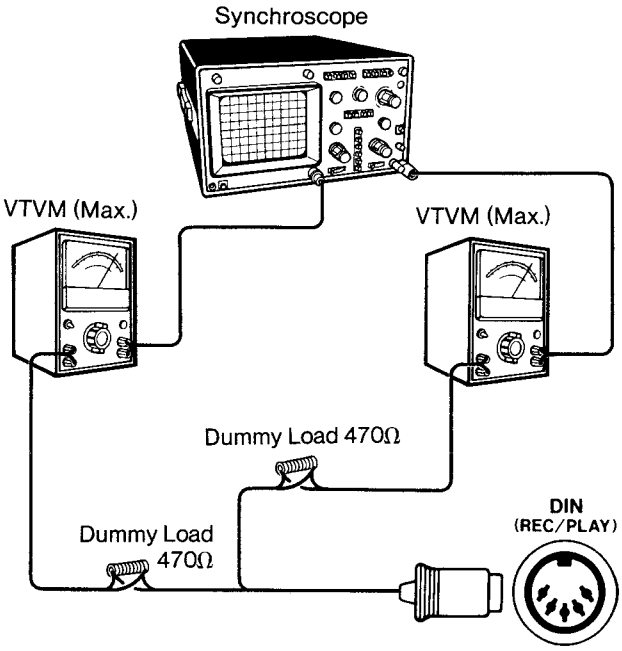
2. Adjust the tape speed by slowly turning the potentiometer inside the Motor until the frequency counter reads 3,000Hz (± 30Hz).



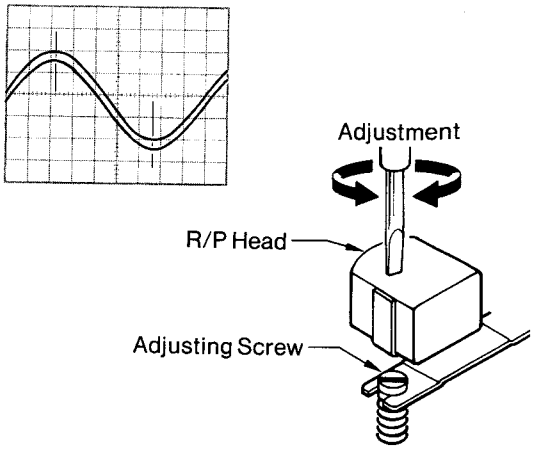
HEAD AZIMUTH ADJUSTMENT

1. Detach the cassette compartment lid from the unit and connect a dualtrace synchroscope and a VTVM to both channel output termianl of DIN socket (REC/PLAY) as illustrated. Then, set the dualtrace synchroscope as follows:
   - * MODE ..... CHOP (chopped)
   - * SOURCE ..... INT (internal), CH1 or CH2
   - * SWEEP MODE ..... AUTO (automatic)

NOTE:
Adjust the field on the synchroscope with the VOLT. ADJ. and TIME ADJ.



2. Insert a 10kHz test tape (Example: TEAC MTT-114) into the cassette compartment. While playing back the test tape, turn the azimuth adjusting screw until the wave forms of the right and left channels are superimposed and set to optimum at maximum reading on the VTVM.



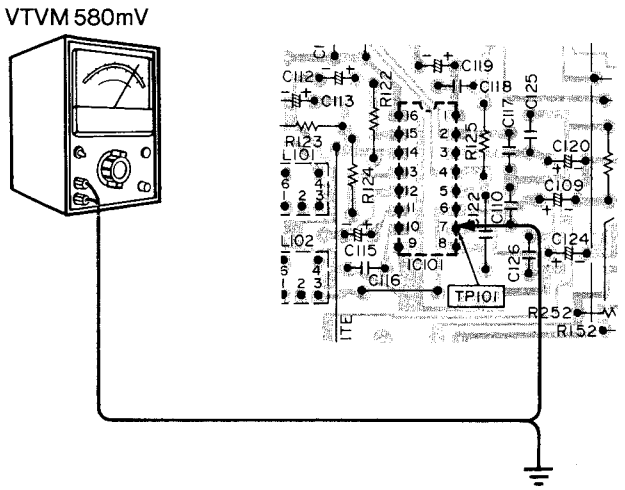
3. After the adjustment, secure the adjusting screw with paint or glue.

ELECTRICAL ADJUSTMENTS (Continued)

PLAYBACK SENSITIVITY ADJUSTMENT

LEFT CHANNEL

1. Connect a VTVM to the Test Point TP101 as illustrated and insert a 400Hz test tape for Dolby Calibration Level (Example: TEAC MTT-150) into the cassette compartment.



2. Check that the VTVM reads 580mV for the output of the left channel while playing back the test tape.

3. If necessary, adjust the output to the specified one by turning the potentiometer (P101) while the test tape is played back.

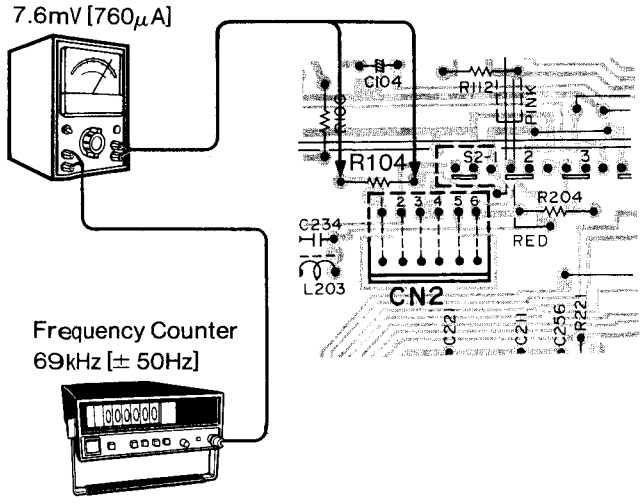
RIGHT CHANNEL

Connect the VTVM to the test point TP201. Then, adjust the potentiometer (P201) for the right channel by following the same procedure as in LEFT CHANNEL.

OSCILLATION FREQUENCY AND RECORDING BIAS ADJUSTMENT

LEFT CHANNEL

1. Connect a VTVM across the resistor R104 and a frequecy counter to the output terminal of the VTVM as illustrated.



2. Insert a cassette tape into the cassette compartment and set the OSC Switch to the position 1.
Then, set the unit in the recording mode.

3. Turn the core of the oscillation transformer (T301) with an alignment tool until the frequency counter reads 69kHz [± 50Hz].

4. Set the Tape Select Switch to **"METAL"** and adjust the potentiometer (P102) until the VTVM reads 7.6mV [760μA] with the unit in the recording mode.

RIGHT CHANNEL

Connect the VTVM across the resistor R204 and adjust the potentiometer (P202) until the VTVM reads 7.6mV [760μA] with the unit in the recording mode by following the same procedure as in LEFT CHANNEL.

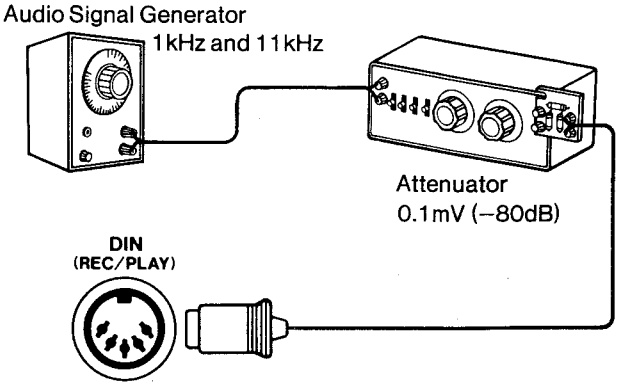
RECORD & PLAYBACK FREQUENCY RESPONSE ADJUSTMENT

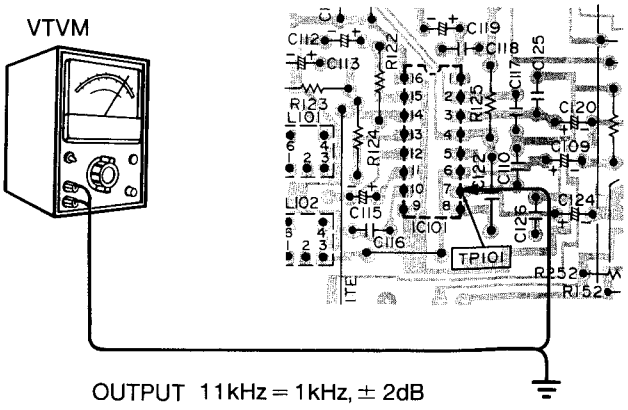
- **Metal Tape**

Set the Tape Select Switch to **"METAL"** and insert a metal tape (Example: TDK AC-711) into the cassette compartment. Then, make the adjustment by the following procedures.

LEFT CHANNEL

1. Connect an audio signal generator and an attenuator to the left channel input terminal of DIN socket (REC/PLAY), and a VTVM to the Test Point TP101 as illustrated.





ELECTRICAL ADJUSTMENTS (Continued)

2. Set the Function Switch to PHONO/DIN and then, alternately record the 1kHz and 11kHz signals from the audio signal generator at 0.1mV (–80dB) on the tape several times.

3. Set the Function Switch to TAPE and check that the 11kHz signal output is identical to the 1kHz signal output or the deviation is ± 2dB on the VTVM while playing back the recorded signals.

4. If necessary, adjust the output by turning the potentiometer (P102) and re-check the output of each signal by playing back the signals after recording operation of the signals.

5. Repeat the above adjustment until the specified output is obtained.

RIGHT CHANNEL

Connect the audio signal generator and the attenuator to the right channel input terminal of DIN socket (REC/PLAY), and the VTVM to the Test Point TP201. Then, adjust the potentiometer (P202) for the right channel by following the same procedure as in LEFT CHANNEL.

- **Chromium Dioxide Tape**

Set the Tape Select Switch to **"CrO2"** and insert a chromium dioxide tape (Example: TDK AC-512) into the cassette compartment.

* Connect the blue wire connector (CN19)to each of the three pins (D, E, and F) in that order.
Record the 1kHz and 11kHz signals on the tape and play them back by following the same procedures as in **"Metal Tape"**. Then, select one of the pins, so that the specified playback output is obtained.

- **Normal Tape**

Set the Tape Select Switch to **"NORMAL"** and insert a normal tape (Example: TDK AC-212) into the cassette compartment.

* Connect the gray wire connector (CN18) to each of the three pins (A, B, and C) in that order.
Record the 1kHz and 11kHz signals on the tape and play them back by following the same procedures as in **"Metal Tape"**. Then, select one of the pins, so that the specified playback output is obtained.

NOTE:

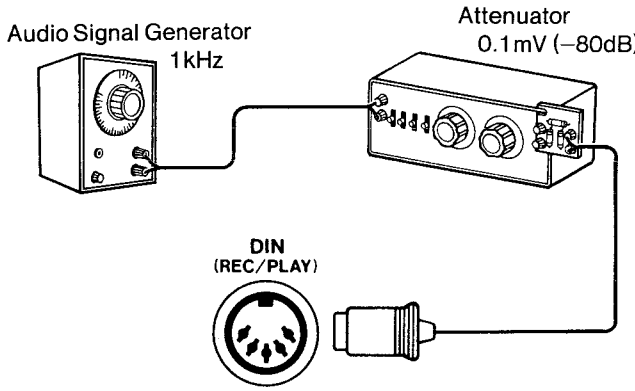
If the specified output was not obtained in the Record & Playback Frequency Response Adjustment for Chromium Dioxide or Normal tapes, repeat the adjustment beginning with the "Metal Tape".

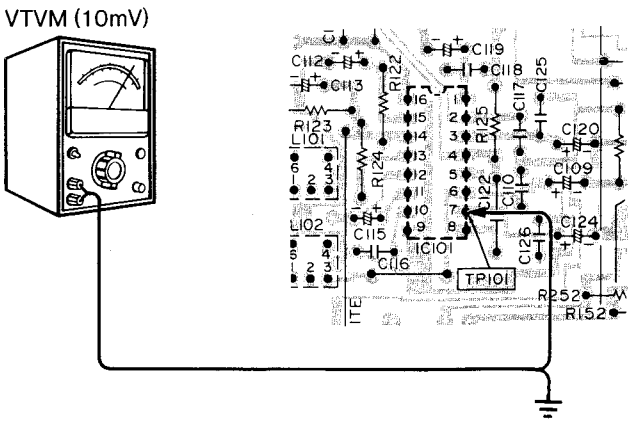
RECORD & PLAYBACK SENSITIVITY ADJUSTMENT

Set the Tape Select Switch to **"METAL"** and insert a metal tape (Example: AC-711) into the cassette compartment.
Then, perform the adjustment by the following procedure.

LEFT CHANNEL

1. Connect an audio signal generator and an attenuator to the left channel input terminal of DIN socket (REC/PLAY), and a VTVM to the Test Point TP101 as illustrated.





2. Set the Function Switch to PHONO/DIN and then, record the 1kHz signal at 0.1mV (–80dB) from the audio signal generator on the tape.

3. Set the Function Switch to TAPE and check that the signal output is 0.1mV (–80dB) on the VTVM while playing back the recorded signal.

4. If necessary, adjust the potentiometer (P103) and re-check the reading of the VTVM by playing back the signal after the recording operation for the signal.

5. Repeat the above adjustment until the specified output is obtained.

RIGHT CHANNEL

Connect the audio signal generator and the attenuator to the right channel input terminal of DIN socket (REC/PLAY), and the VTVM to the Test Point TP201. Then, adjust the potentiometer (P203) for the right channel by following the same procedure as in LEFT CHANNEL.

TUNER ADJUSTMENT

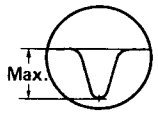
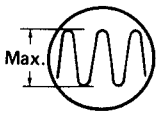
EQUIPMENT REQUIRED

- AM Standard Signal Generator
- FM Standard Signal Generator
- Generator Scope
- Stereo Signal Generator
- Loop Antenna
- Dummy Antenna (30Ω /10pF) for SW
- Dummy Antenna (75Ω , unbalanced type) for FM
- VTVM
- Frequency Counter
- Distortion Meter
- Oscilloscope
- Dummy Load (3.2Ω)
- Alignment Tool
- Before performing the adjustment, set the switches and controls as follows:
  - * Function Switch ..... RADIO ON
  - * Mode Switch ..... MONO
  - * Tone Controls ..... Flat
  - * Balance Control ..... Center
  - * Volume Control ..... Center

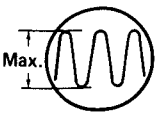
NOTE:
Use an alignment tool with plastic grip for all adjustments.

MW ALIGNMENT

Standard Test Frequency 400Hz and Modulation 30% at AM

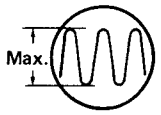
Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF for AM	Connect loop antenna to output terminal of gene-scope. Place loop antenna 60cm away from bar antenna.	Connect input terminal of gene-scope to detector output terminals (CN1-1 and CN1-4, or CN1-5).	460kHz	Low End	T8, T9 and T10	Obtain symmetrical curve and maximum amplitude. 
2	Calibration of Tuning Range	Connect loop antenna to output of AM signal generator. Place loop antenna 60cm away from bar antenna.	Connect VTVM with 3.2Ω dummy load and oscilloscope to Ext. speaker jack.	510kHz		T6	Obtain sine-wave of 400Hz and maximum amplitude. 
3				1,670kHz	High End	TC4	
4	Adjustment of Tracking			600kHz	600kHz	L4-3 (bar ant. coil)	
5				1,400kHz	1,400kHz	TC3 (PVC)	
6	Repeat the above steps until no further change is noted in any of the adjustments.						

LW ALIGNMENT

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of Tuning Range	Connect loop antenna to output of AM signal generator. Place loop antenna 60cm away from bar antenna.	Connect VTVM with 3.2Ω dummy load and oscilloscope to Ext. speaker jack.	145kHz	Low End	T5	Obtain sine-wave of 400Hz and maximum amplitude. 
2				365kHz	High End	TC5	
3	Adjustment of Tracking			170kHz	170kHz	L4-1 (bar ant. coil)	
4				310kHz	310kHz	TC2 (PVC)	
5	Repeat the above steps until no further change is noted in any of the adjustments.						

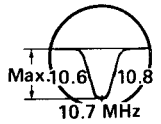
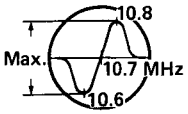
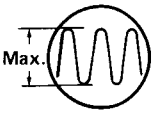
TUNER ADJUSTMENT (Continued)

SW ALIGNMENT

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of Tuning Range	Connect AM signal generator to antenna terminals (TP1 and TP2) through dummy antenna (30Ω /10pF).	Connect VTVM with 3.2Ω dummy load and oscilloscope to Ext. speaker jack.	5.7MHz	Low End	T7	Obtain sine-wave of 400Hz and maximum amplitude. 
2				18.7MHz	High End	TC3	
3	Adjustment of Tracking			6.5MHz	6.5MHz	T4	
4				17.0MHz	17.0MHz	TC1	
5	Repeat the above steps until no further change is noted in any of the adjustments.						

FM ALIGNMENT

Standard test frequency 400Hz and deviation 22.5kHz

Step	Alignment	Connections		Frequency of Signal Generator	Tuning Dial Setting	Adjustments	Remarks
		INPUT	OUTPUT				
1	Calibration of IF	Place output of gene-scope on Trap Coil (L3).	Connect input terminal of gene-scope to detector output terminals (CN1-1 and CN1-4, and CN1-5).	10.7MHz	Low End	Turn T3(blue core) fully counter-clockwise T1 and T2.	Obtain symmetrical curve and maximum amplitude. 
2						T3 (blue core)	Obtain **S** curve and maximum amplitude. 
3	Calibration of Tuning Range	Connect FM signal generator to antenna terminals (TP1 and TP2) through dummy antenna (75Ω , unbalanced type).	Connect VTVM with 3.2Ω dummy load and oscilloscope to Ext. speaker jack.	87.35MHz		L2	Obtain sine-curve and maximum amplitude. 
4				108.25MHz	High End	TC2 (PVC)	
5	Adjustment of Tracking			90MHz	90MHz	L1	
6				106MHz	106MHz	TC1 (PVC)	
7	Repeat the above steps until no further change is noted in any of the adjustments.						

TUNER ADJUSTMENT (Continued)

FM MPX (Multiplex) ADJUSTMENT

Before the adjustment, set the switches and controls as follows:

- Function Select Switch ..... RADIO ON
- Band Select Switch ..... FM
- Mode Switch ..... STEREO
- Tone Controls ..... Flat
- Balance Control ..... Center
- Volume Control ..... Center

19kHz (V.C.O.) ADJUSTMENT

1. Connect a Frequency counter to the twelfth pin (Test Point TP4) in IC2 (μPC1197C).

2. Adjust the potentiometer (P1) until the oscillation frequency of IC2 becomes 19kHz (± 20Hz).

CHANNEL SEPARATION ADJUSTMENT

1. Connect a stereo signal generator and a FM signal generator through the 75Ω dummy antenna (unbalanced type) to the antenna terminals (TP1 and TP2) on the Radio Tuner P.C.Board.

2. Connect the VTVM with 3.2Ω dummy load distortion meter, and oscilloscope to the Ext. speaker jack of the left channel.

3. Adjust the input measuring instruments as follows:
   - Stereo Signal Generator
     - * Pilot Signal ..... 7.5kHz dev. (modulation 10%)
     - * Stereo Signal ..... 67.5kHz dev. for main signal (modulation 90%)
     - * Modulation Frequency 400Hz
   - FM Standard Signal Generator
     - * Signal Generator Frequency 98MHz
     - * Signal Generator Output 60dBμ

4. Set the tuning frequency to 98MHz.

5. Turn the potentiometer (P2) and adjust the channel separation by following the Chart below.

NOTE:
Use an alignment tool with plastic grip for all adjustments.

Step	Alignment	Connections		Tuning Dial Setting	Adjustment	Remarks
		INPUT	OUTPUT			
1	FM Stereo Signal Separation	Pilot (19kHz) and Sub channel signals of Stereo SG —ON	Connect measuring instruments to **L channel** Ext. speaker jack.	98MHz	Dial of FM SG	Maximize amplitude of Oscilloscope and VTVM reading with minimum distortion.
2		**R channel** and Pilot signal of Stereo SG —ON			P2	Minimize amplitude of Oscilloscope and VTVM reading.
3	Repeat the above steps until no further change is noted in any of the adjustments.					

6. Connect the measuring instruments to the external speaker jack of the right channel and perform the adjustment by following the Chart below.

Step	Alignment	Connections		Tuning Dial Setting	Adjustment	Remarks
		INPUT	OUTPUT			
1	FM Stereo Signal Separation	Pilot (19kHz) and Sub channel signals of Stereo SG —ON	Connect measuring instruments to **R channel** Ext. speaker jack.	98MHz	Dial of FM SG	Maximize amplitude of Oscilloscope and VTVM reading with minimum distortion.
2		**L channel** and Pilot signal of Stereo SG —ON			P2	Minimize amplitude of Oscilloscope and VTVM reading.
3	Repeat the above steps until no further change is noted in any of the adjustments.					

7. Repeatedly perform the adjustments in **Items 5 and 6** to minimize the signal leakage for both right and left channels. Then, reduce the difference between each channel separation by adjusting the potentiometer (P2).

DIAL CORD STRINGING

1 Mount the Drum on the Radio Chassis as illustrated and fully turn the shaft of the variable capacitor counterclockwise.

2. Mount the Radio Tuner P.C.Board on the Radio Chassis and then, insert the shaft of the variable capacitor into the Drum.

3. Tie the Dial Cord of length 900mm and diameter ϕ5 to the Spring and hook the Spring to the illustrated position of the drum.

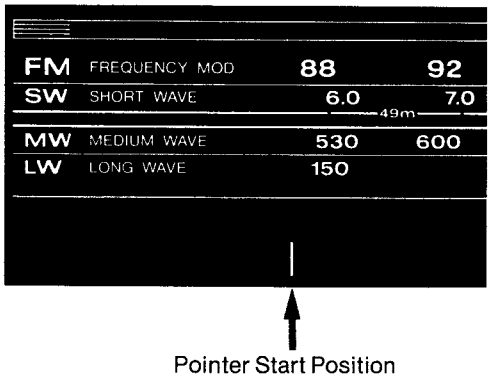
4. Engage the Dial Cord as illustrated in the following order.
Spring → Drum → Roller A → Roller B → Tuning Shaft (4 turns) → Roller C → Roller D → Roller E → Drum → Spring

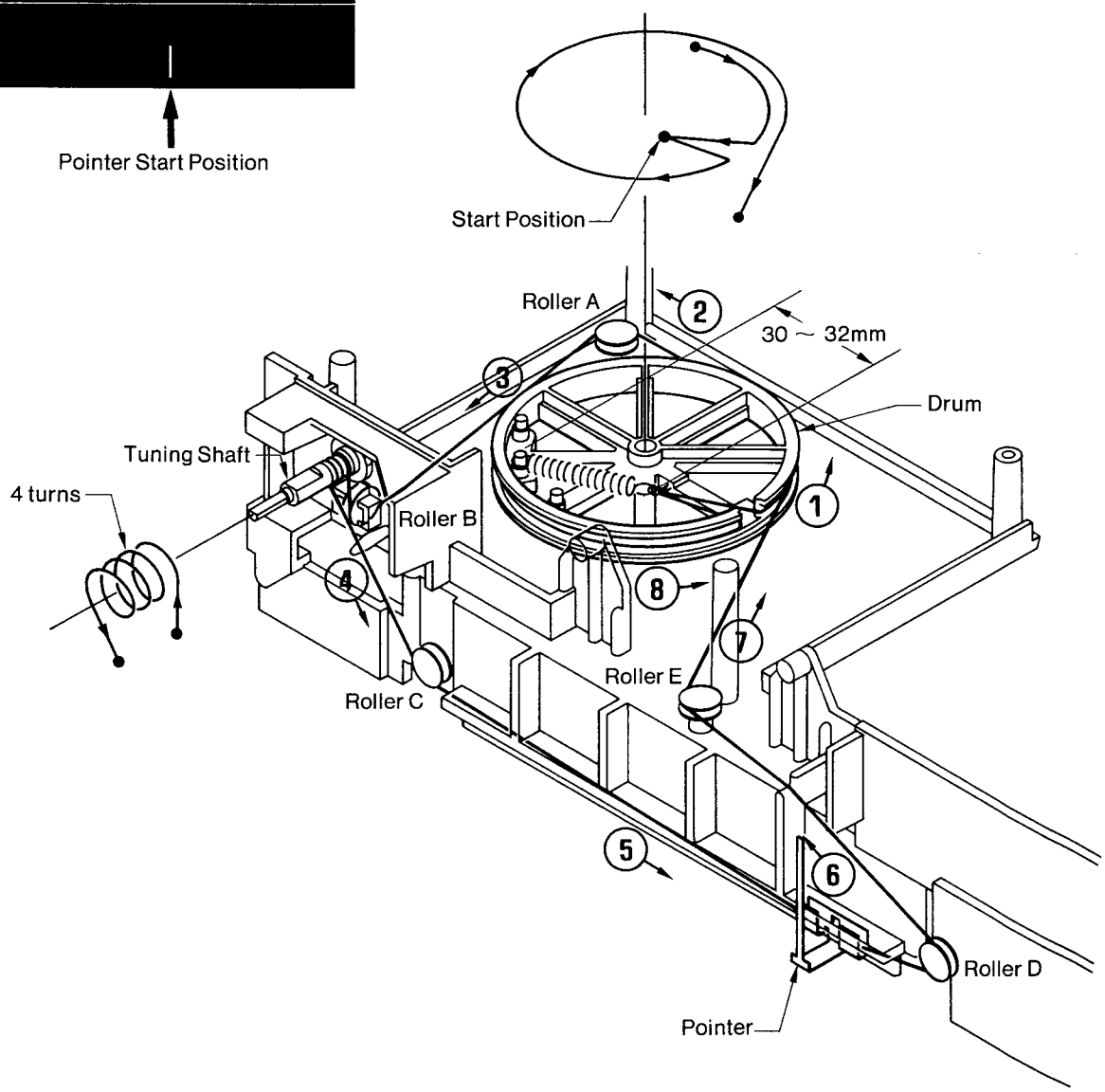
4. Hook the Dial Cord to the Spring and tie the Cord where the spring tip expand until the spring length becomes 30 ~ 32 as illustrated.

6. Secure the place where the Spring is hooked to the Drum and knot in the dial cord with paint or glue.

7. Turn the Tuning Shaft counterclockwise until it stops and mount the Dial Plate to the Radio Chassis and then, set the Pointer over the mark on the Dial Plate as illustrated.

8. Secure the Pointer with paint or glue.





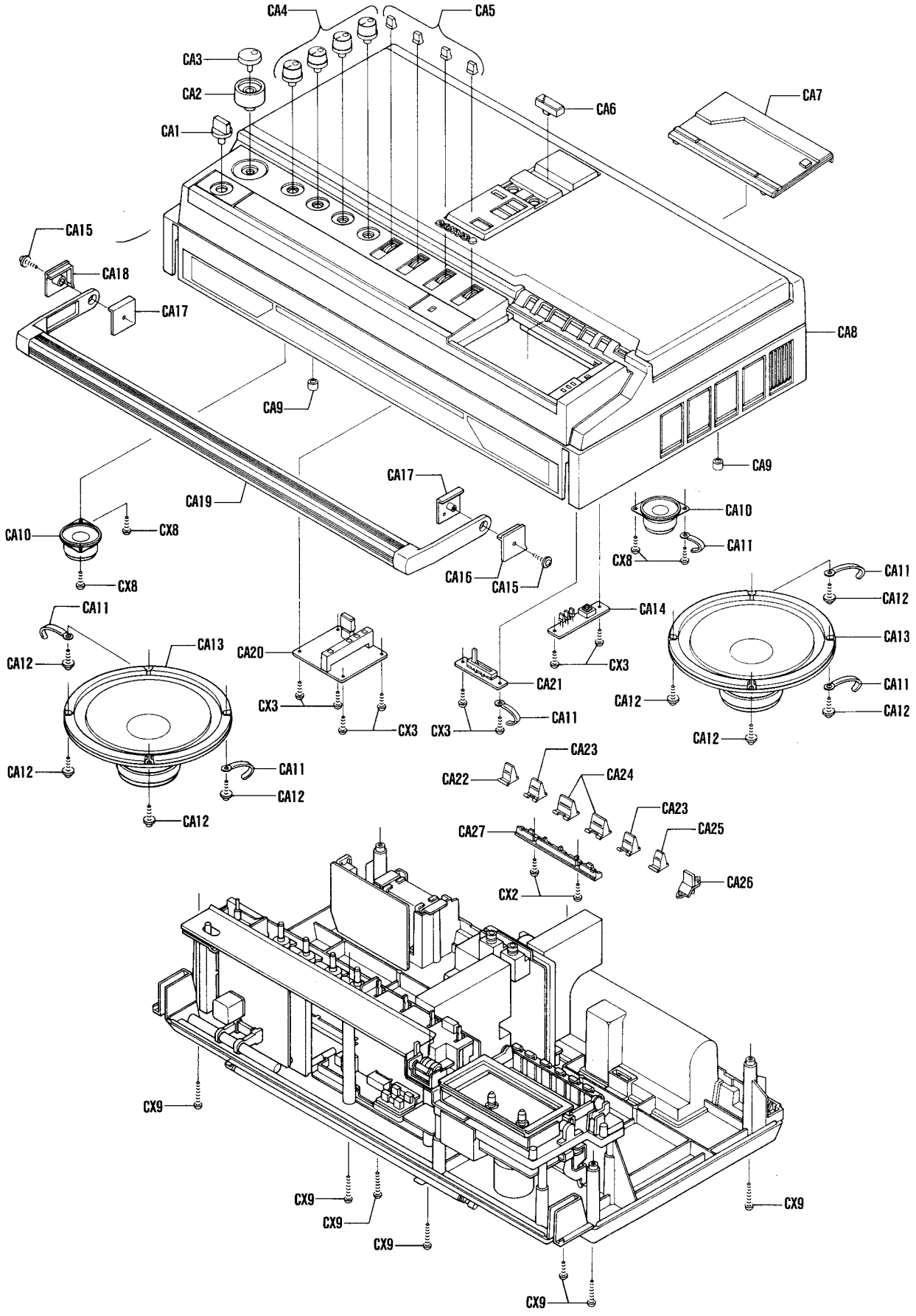
PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	PACKAGE		
	141 6 1419 61103	Individual Carton	1
	141 6 1449 79100	Styrofoam Case, Left	1
	141 6 1449 79200	Styrofoam Case, Right	1
	141 6 1449 80500	Styrofoam Pad	1
	141 6 2519 14290	Poly Cover	1
	141 6 2519 25035	Poly Cover 250 x 350	1
	141 6 4559 00100	Serial No. Sheet	3
	ACCESSORIES		
	4 2419 72493	Cassette	1
	⚠4 2439 70310	Cord Power	1
	141 2 3529 10600	Stopper, Cassette	1
	141 6 2519 11022	Poly Cover 110 x 220	1
	141 6 4729 07400	Caution Label	1
	141 6 4729 16700	Caution Label	1
	141 6 4729 35700	FTZ Notice	1
	142 6 4119 31521	Instruction Book	1
	CABINET		
	4 2359 70990	Socket Pin RT	1
	141 2 4419 17400	Cushion	3
C152	CB6 8 5500 0000T	None-polar 6.8μF 50V	1
C252	CB6 8 5500 0000T	None-polar 6.8μF 50V	1
CA1	141 2 1639 47700	Select Knob	1
CA2	141 2 1639 47900	Tuning Knob	1
CA3	141 2 1639 48000	Fine Tuning Knob	1
CA4	141 2 1639 47800	Volume Knob	4
CA5	141 2 1629 06500	Knob, Switch Lever	4
CA6	141 2 1649 18200	Knob, Mixing Volume	1
CA7	141 0 1249 21900	Cassette Lid Assy	1
CA8	141 0 1119 85502	Cabinet Top Assy	1
CA9	4 1539 70661	Microphone [BM101/BM201]	2
CA10	4 1519 71320	Speaker (3.2Ω) [SP102/SP202]	2
CA11	141 2 4729 03400	Lug	6
CA12	141 2 4219 14200	Screw	8
CA13	4 1519 71310	Speaker (3.2Ω) [SP101/SP201]	2
CA14	4 1329 77860	Indicator P.C.B. Assy [**See PCB4**]	1
CA15	141 2 4219 11700	Screw	2
CA16	141 2 1719 26200	Bracket, Handle L	1
CA17	141 2 1719 26300	Handle Support	2
CA18	141 2 1719 26100	Bracket, Handle R	1
CA19	141 0 1719 10100	Handle Assy	1
CA20	4 1329 77840	AMSS Control P.C.B. Assy [**See PCB3**]	1
CA21	4 1329 77870	Mic. Mix. Volume P.C.B. Assy [**See PCB5**]	1
CA22	141 2 1659 03500	Select Button	1
CA23	141 2 1659 03400	Select Button	2
CA24	141 2 1659 03300	Select Button	2
CA25	141 2 1659 03501	Record Button	1
CA26	141 2 1659 03600	Eject Button	1
CA27	141 2 2629 04800	Button Holder	1
CA28	141 2 8549 14500	Spring, RP Switch	1
CA29	141 2 3229 38400	Pad, Speaker Low	1
CA30	141 2 4729 04100	Lug	1
CA31	141 2 3779 19400	Bracket, PCB	1
CA32	4 1329 77880	Power Amplifier P.C.B. Assy [**See PCB6**]	1
CA33	141 2 3229 38300	Pad, Speaker Upper	1
CA34	141 2 4219 15000	Screw	2
CA35	4 1969 70014	Power Supply P.C.B. Assy [**See PCB7**]	1
CA36	141 2 4469 40401	Cushion	1
CA37	141 2 1339 27400	Battery Lid	1
CA38	141 0 1119 85604	Cabinet Bottom Assy	1
CA39	4 2449 70340	Rod Antenna	1
CA40	4 2379 70650	Terminal Ring	1
CX1	101 3 1302 60814	Screw, Pan Hd. +M2.6x8	1
CX2	103 3 1302 60611	Screw, Pan Hd. Tapping-2 +M2.6x6	2
CX3	103 3 1302 60811	Screw, Pan Hd. Tapping-2 +M2.6x8	8
CX4	103 3 1303 00619	Screw, Pan Hd. Tapping-2 +M3.0x6	1
CX5	103 3 1303 00811	Screw, Pan Hd. Tapping-2 +M3.0x8	4
CX6	103 3 1303 01011	Screw, Pan Hd. Tapping-2 +M3.0x10	5
CX7	103 3 1303 02019	Screw, Pan Hd. Tapping-2 +M3.0x20	4
CX8	103 3 1703 00811	Screw, Bind Hd. Tapping-2 +M3.0x8	4
CX9	143 3 1303 02011	Screw, Pan Hd. Tapping-B +M3.0x20	7
	RADIO CHASSIS		
DC1	141 2 3119 16600	Radio Chassis	1
DC2	141 2 8259 05900	Dial Roller	1
DC3	141 2 1519 34601	Dial Plate	1
DC4	141 2 8519 06700	Spring, CST Case Lever B	1
DC5	141 2 5389 02600	Dial Drum	1
DC6	141 2 4219 14000	Screw	4
DC7	141 2 5519 03300	Dial Roller A	4
DC8	4 5119 70780	LED Meter P.C.B. Assy [**See PCB8**]	1
DC9	4 2379 70650	Terminal Ring	1
DC10	141 2 3229 38800	Shield Plate	1
DC11	4 1329 77851	Pre-Amplifier P.C.B. Assy [**See PCB1**]	1
DC12	141 0 3679 02601	Jack Plate Assy	1
DC13	4 2249 70300	Fine Tuner [FT1]	1
DC14	141 2 3229 37900	Shield Plate	1
DC15	141 2 8219 31900	Pointer	1
DC16	4 1259 71790	Radio Tuner P.C.B. Assy [**See PCB2**]	1
DY1	628 3 0911 00000	Dial String, φ0.5	1
DY2	101 3 1303 00811	Screw, Pan Hd. +M3.0x8	5
DY3	103 3 1302 60611	Screw, Pan Hd. Tapping-2 +M2.6x6	2
DY4	103 3 1302 60814	Screw, Pan Hd. Tapping-2 +M2.6x8	1
DY5	103 3 1303 00618	Screw, Pan Hd. Tapping-2 +M3.0x6	2
DY6	103 3 1303 00811	Screw, Pan Hd. Tapping-2 +M3.0x8	9
DY7	103 3 1303 02511	Screw, Pan Hd. Tapping-2 +M3.0x25	1
DY8	110 3 9320 80082	Fiber Washer M3.2x8.0x0.8	1

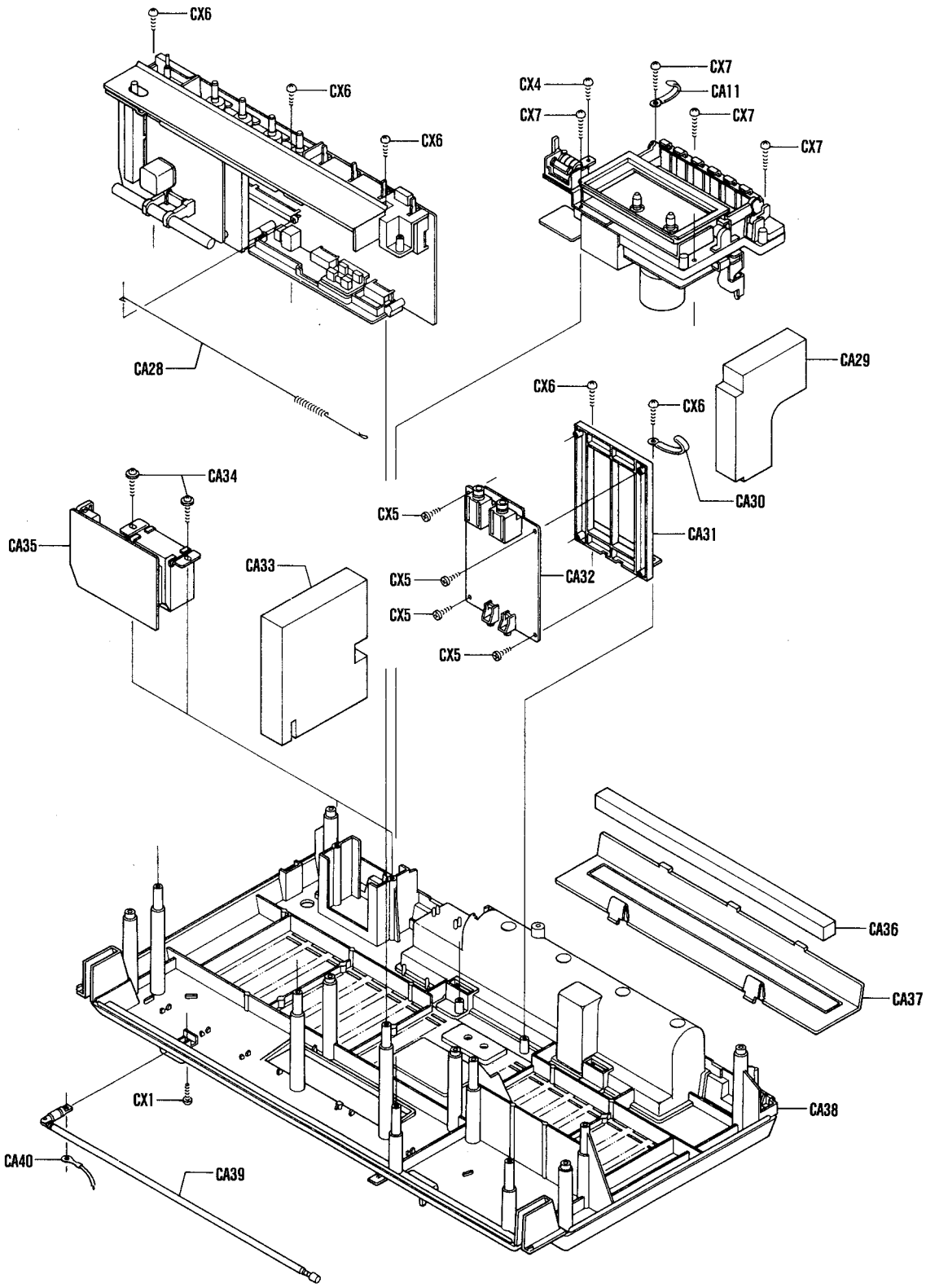
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

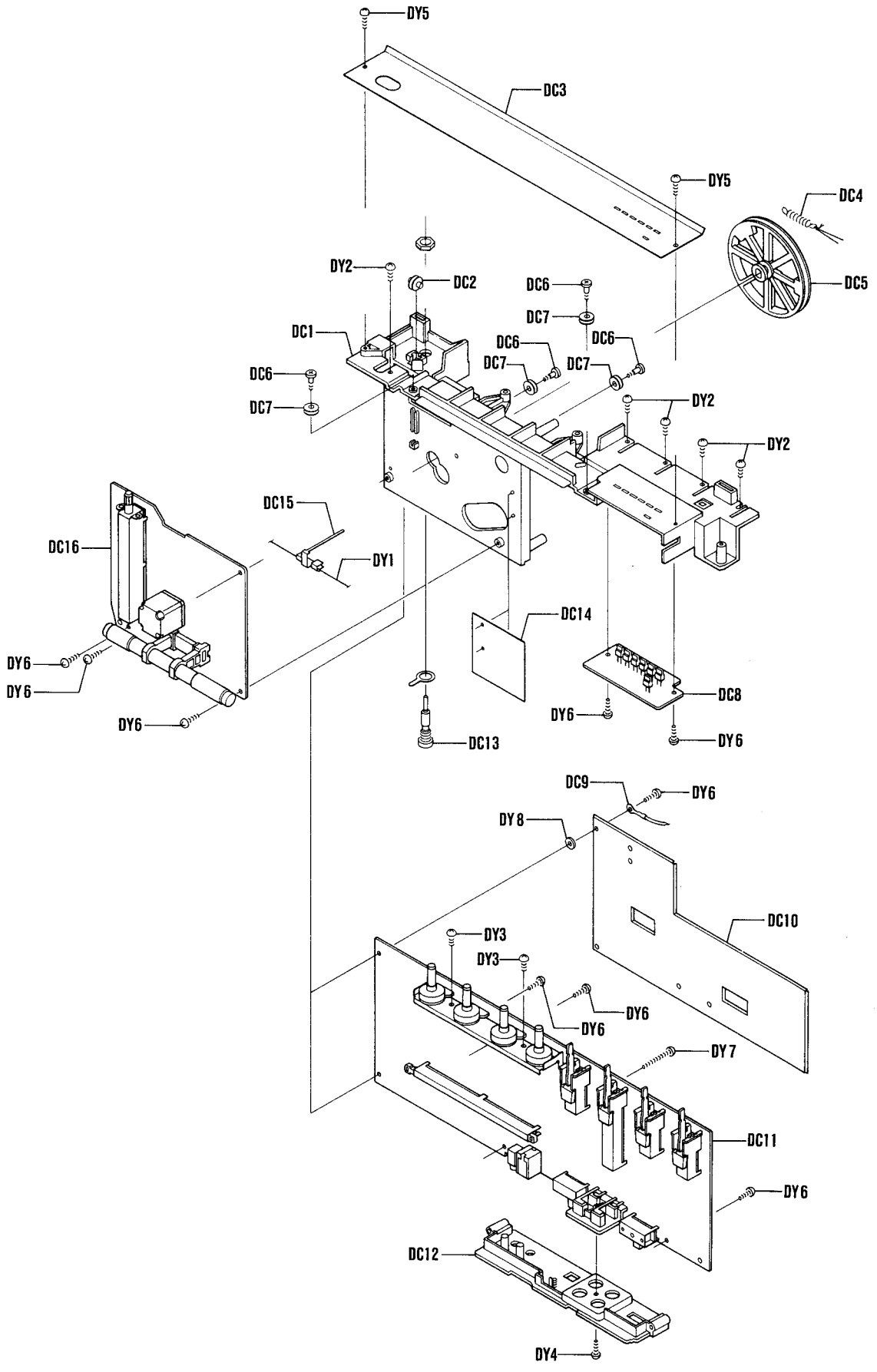
CABINET EXPLODED VIEW



CABINET EXPLODED VIEW (Continued)



CABINET EXPLODED VIEW (Continued)



MECHANISM PARTS LIST

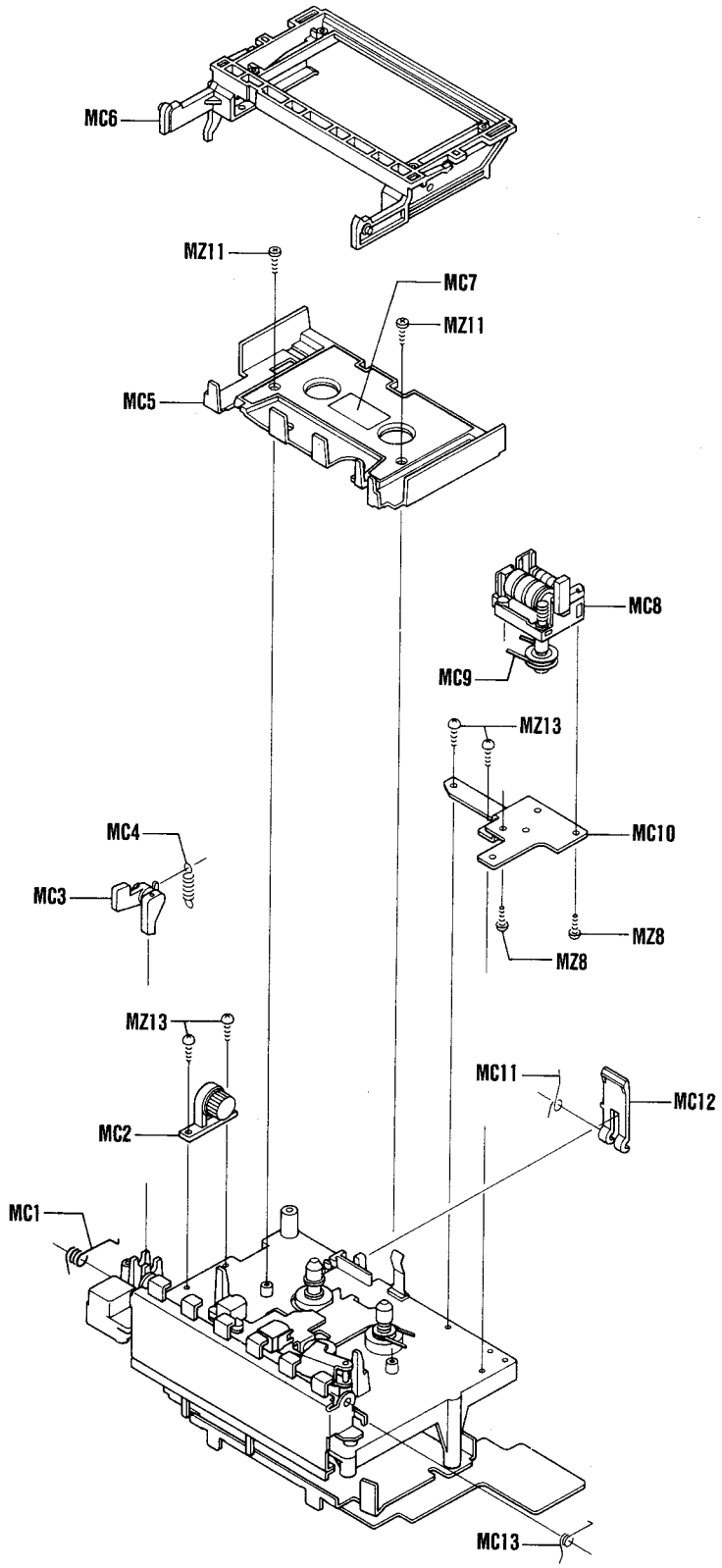
Ref. No.	Part No.	Description	Q'ty
	MECHANISM		
CN2	4 2359 75549	Connector 6P Assy	1
CN9	4 2359 75554	Connector 3P Assy	1
C337	CB4 7 4160 0000V	None-polar 0.47μF 16V	1
C339	CD1 0 7160 0001V	Electrolytic 100μF 16V	1
MC1	141 2 8549 01700	Spring, Lid Cast-up	1
MC2	141 0 5519 07900	Eject Gear Assy	1
MC3	141 2 7419 71500	Eject Lever	1
MC4	141 2 8519 41300	Spring, Lock Lever	3
MC5	141 2 1149 22800	Cabinet Compartment	1
MC6	141 2 1249 25400	Cassette Lid Frame	1
MC7	141 2 1519 24700	Reflector	1
MC8	141 2 8119 10600	Counter	1
MC9	141 2 5649 19900	Counter Belt	1
MC10	141 2 8139 08600	Counter Bracket	1
MC11	141 2 8549 01600	Spring, Cassette Lid Lock	1
MC12	141 2 7419 71400	Cassette Lid Lock	1
MC13	141 2 8549 11100	Spring, Cassette Lid R	1
MC14	141 2 8549 02200	Spring, Start	1
MC15	141 2 8259 08900	Roller Plate	2
MC16	141 2 4219 23000	Screw	2
MC17	141 0 7319 22200	Power Plate Assy	1
MC18	141 2 8519 19300	Spring, Brake	1
MC19	141 2 7319 44200	Lock Button Plate	1
MC20	141 2 8549 01200	Spring, Rewind Arm	2
MC21	141 2 8259 09000	Spacer, Lock Button	2
MC22	141 2 8549 07400	Spring, Lock Button	1
MC23	141 2 5519 39000	Actuate Gear	1
MC24	4 1329 77890	Terminal P.C.B. Assy [**See PCB9**]	1
MC25	141 2 4729 04100	Lug	4
MC26	4 5279 71061	Motor [M1]	1
MC27	141 2 3229 38700	Plate Shield	1
MC28	141 2 3519 52300	Support Flywheel	1
MC29	4 2319 74360	Leaf Switch (Pause) [S11]	1
MC29	4 2319 74360	Leaf Switch (Motor) [S13]	1
MC29	4 2319 74360	Leaf Switch (Cue) [S14]	1
MC29	4 2319 74360	Leaf Switch (Review) [S15]	1
MC29	4 2319 74360	Leaf Switch (AMSS) [S16]	1
MC29	4 2319 74360	Leaf Switch (Play) [S17]	1
MC29	4 2319 74360	Leaf Switch (Record) [S18]	1
MC30	4 2319 74362	Leaf Switch (Trigger) [S12]	1
MC31	141 2 4459 11800	Cushion, Motor	3
MC32	141 2 3529 19900	Spacer, Motor	3
MC33	141 2 5619 01400	Drive Belt	1
MC34	141 2 5739 06100	Flywheel Thrust	1
MC35	141 0 5219 08900	Flywheel Assy	1
MC36	141 0 3519 19300	Record Bracket Assy	1
MC37	141 2 7419 73100	Lever, Record Spring	1
MC38	141 2 4219 05400	Screw w/Washer	2
MC39	141 2 7419 73000	Record Lever	1
MC40	141 2 4539 06900	Washer	1
MC41	141 2 1619 78301	Plate, Play Button	2
MC42	141 2 8549 03400	Spring, Button Plate	5
MC43	141 2 1619 78401	Plate, FF/REW Button	2
MC44	141 2 8549 03401	Spring, Play Button	1
MC45	141 2 1619 78201	Plate, Stop Button	2
MC46	141 2 6139 14100	Button Frame	1
MC47	4 2379 70650	Terminal Ring	1
MC48	141 2 7319 44700	Select Plate	1
MC49	141 0 3119 19300	Chassis Assy	1
MC50	141 2 7419 71300	Lever, REC/Stop	1
MC51	141 2 8549 04400	Spring, Interlock	2
MC52	141 2 8429 05700	Interlock Plate	1
MC53	141 2 7319 44800	Eject Plate	1
MC54	141 2 4219 13201	Screw w/Washer	5
MC55	141 2 8539 41300	Spring, Eject Plate	1
MC56	141 2 8559 00200	Spring, Erase Head	1
MC57	4 2429 71990	Erase Head [HD2]	1
MC58	141 2 8539 39800	Spring, Base	1
MC59	141 2 8549 00700	Spring, Brake	3
MC60	4 2429 71670	Record/Play Head [HD1]	1
MC61	141 2 8519 74300	Spring, Azimuth	1
MC62	141 2 7319 44100	Slide Base	1
MC63	141 0 5419 02400	Pinch Roller Assy	1
MC64	141 2 8549 01500	Spring, Pinch Roller	1
MC65	141 2 4459 25800	Brake Cover	2
MC66	141 2 7149 05000	Brake	1
MC67	141 2 4219 24700	SCrew, Pan Hd. +M2.6x12	5
MC68	141 2 5369 00400	Cap Reel Plate	2
MC69	141 2 4539 27100	Washer	1
MC70	141 2 5319 03500	Reel Fin	1
MC71	141 2 8519 67901	Spring, Supply Reel	1
MC72	141 2 5319 10300	Supply Reel Gear	1
MC73	141 2 7419 71000	Stop Button Lever P	1
MC74	141 2 8549 01300	Spring, Stop Record	1
MC75	141 2 5519 38200	Idler Gear	1
MC76	141 2 8539 39700	Cassette Spring	1
MC77	141 0 5319 05700	Take-up Reel Assy	1
MC78	141 2 7419 71600	Pause Lever	1
MC79	141 2 8549 01100	Spring, Take-up Arm	1
MC80	141 0 7439 09600	Take-up Arm Assy	1
MC81	141 2 7419 72700	Lever, Stop ASO	1
MC82	141 2 8549 01400	Spring, Pause ASO	1
MC83	141 2 7319 44600	Pause Latch Plate	1
MC84	141 2 8519 39300	Spring, Slide Base	1
MC85	141 2 5519 38600	Take-up Gear	1
MC86	141 2 8549 01800	Spring, Pause Lock	1
MC87	141 2 7419 71100	ASO Lever	1
MC88	141 2 5519 38900	ASO Gear	1
MC89	141 0 5519 08000	Friction Assy	1
MC90	141 2 5649 16900	ASO Belt	1
MC91	141 2 8549 05700	Spring, Stop Lever	1
MC92	141 2 7419 70600	Stop Lever	1
MC93	141 2 8549 00500	Spring Pin	6
MC94	141 2 7319 43700	Stop Plate	1
MC95	141 2 7539 00500	Pin	6
MC96	141 2 7319 43601	Fastwind Plate	1
MC97	141 2 7319 43500	Pause Plate	1
MC98	141 2 8549 00800	Plate Spring	3
MC99	141 2 8549 07500	Spring, FF Plate	1
MC100	141 2 6139 14200	Plate Frame	1
MC101	141 2 7319 44300	Lock Plate	1
MC102	141 2 7319 44400	Control Plate	1
MC103	141 2 8549 02000	Spring, Start Lever	1
MC104	141 2 7419 70500	Start Lever	1
MC105	141 2 7419 70900	Lock Plate Lever	1
MC106	4 2649 70343	Solenoid [SL1]	1
MC107	141 2 8549 00900	Spring, Play Plate	1
MC108	141 2 8549 01900	Spring, Slide Base	1
MC109	141 2 7319 43800	Play Plate	1
MC110	141 2 7319 43901	Rewind Plate	1
MC111	141 2 7319 44000	Record Plate	1
MC112	141 2 8549 01000	Spring, REC Plate	1
MC113	141 0 7439 09500	Rewind Arm Assy	1
MC114	141 2 5519 38800	Idler Pulley Gear	1
MC115	141 2 5519 38700	Fastwind Gear	1
MC116	141 2 5649 16800	Wind Belt	1
MC117	141 0 7419 28700	Fastwind Lever Assy	1

MECHANISM PARTS LIST (Continued)

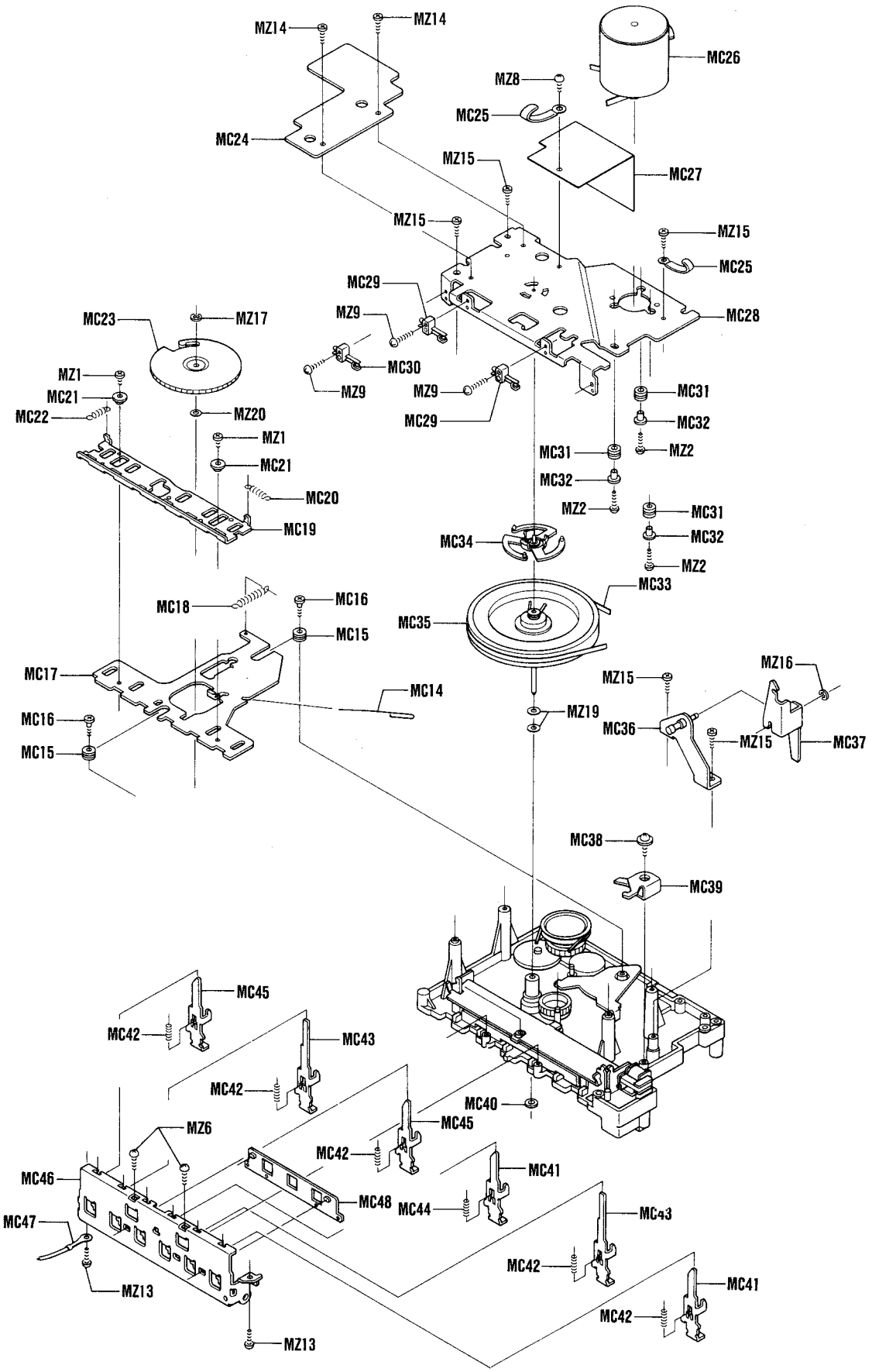
Ref. No.	Part No.	Description		Q'ty
MC118	141 2 7419 70700	Review Lever		1
MC119	141 2 7419 71200	Eject Lock Lever		1
MC120	141 2 8549 02100	Spring, Control Plate		1
MZ1	101 3 1302 00311	Screw, Pan Hd.	+M2.0x3	2
MZ2	101 3 1302 60811	Screw, Pan Hd.	+M2.6x8	3
MZ3	101 3 1702 00411	Screw, Bind Hd.	+M2.0x4	1
MZ4	101 3 1702 00811	Screw, Bind Hd.	+M2.0x8	1
MZ5	101 3 2502 01011	Screw, Cylinder Hd.	-M2.0x10	1
MZ6	103 3 1302 00611	Screw, Pan Hd. Tapping-2	+M2.0x6	2
MZ7	103 3 1302 01011	Screw, Pan Hd. Tapping-2	+M2.0x10	1
MZ8	103 3 1302 60611	Screw, Pan Hd. Tapping-2	+M2.6x6	3
MZ9	103 3 1302 61011	Screw, Pan Hd. Tapping-2	+M2.6x10	3
MZ10	103 3 1702 00711	Screw, Bind Hd. Tapping-2	+M2.0x7	1
MZ11	103 3 1702 00813	Screw, Bind Hd. Tapping-2	+M2.0x8	2
MZ12	143 3 1302 60611	Screw, Pan Hd. Tapping-B	+M2.6x6	4
MZ13	143 3 1302 60811	Screw, Pan Hd. Tapping-B	+M2.6x8	7
MZ14	143 3 1702 60611	Screw, Bind Hd. Tapping-B	+M2.6x6	2
MZ15	143 3 1702 60818	Screw, Bind Hd. Tapping-B	+M2.6x8	4
MZ16	112 3 1301 50082	E Ring	M1.5	9
MZ17	112 3 1302 00082	E Ring	M2.0	2
MZ18	110 3 9210 50024	Nylon Washer	M2.1x5.0x0.2	4
MZ19	110 3 9260 70025	Mylar Washer	M2.6x7.0x0.2	2
MZ20	110 3 9310 60025	Mylar Washer	M3.1x6.0x0.2	1
MZ21	110 3 1202 00013	Finished Washer	M2.0	1

NOTES:
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

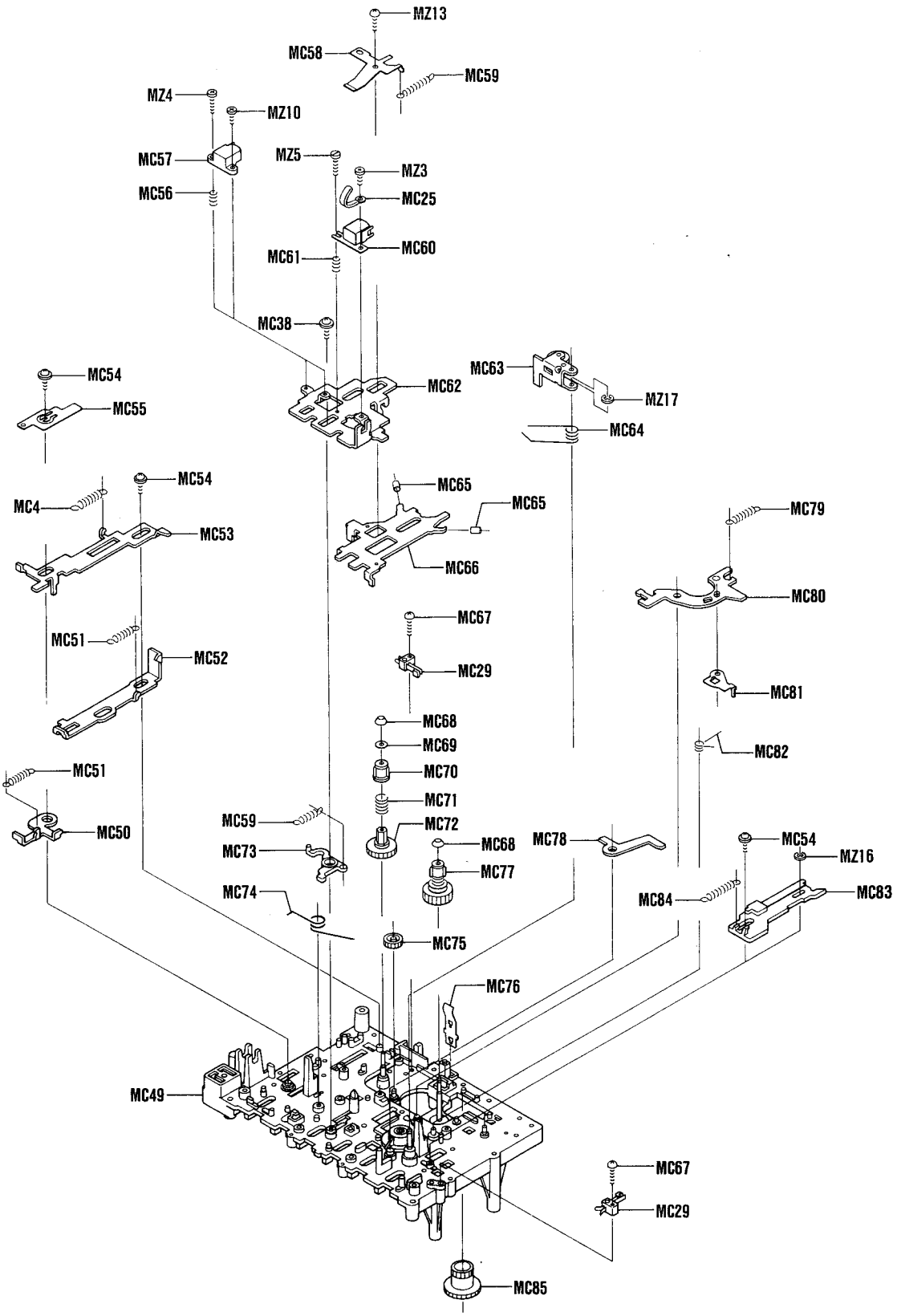
MECHANISM EXPLODED VIEW



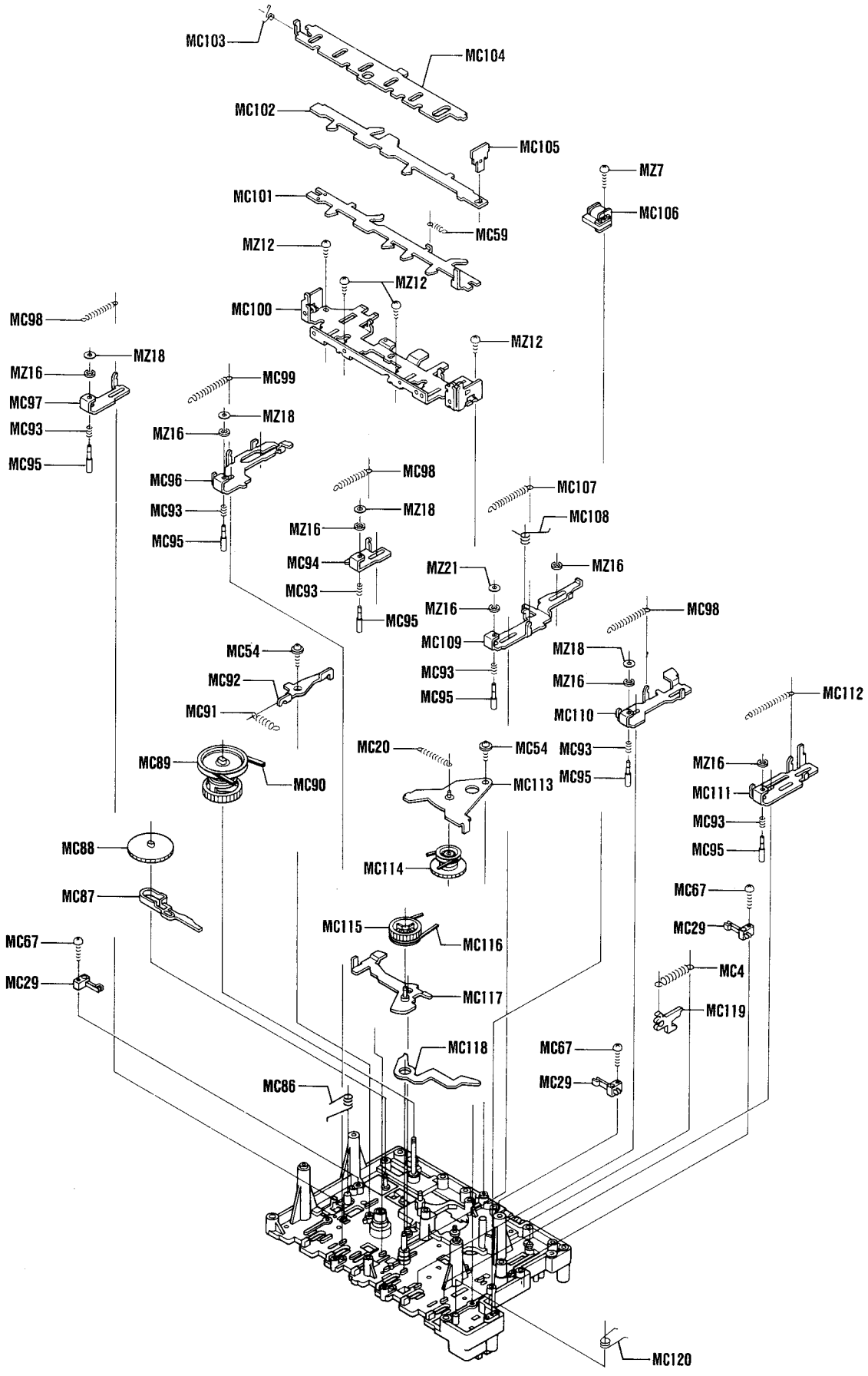
MECHANISM EXPLODED VIEW (Continued)



MECHANISM EXPLODED VIEW (Continued)



MECHANISM EXPLODED VIEW (Continued)



P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	PRE-AMPLIFIER P.C.B. ASSY		
PCB1	4 1329 77851	Pre-Amplifier P.C.B. Assy	1
	4 2439 71421	Flat Wire 4	1
	141 2 4729 08000	Clamp Wire	1
CN1	4 2369 72920	Connector 5P	1
CN2	4 2369 73600	Connector 6P	2
CN3	4 2369 73110	Connector 4P	1
CN7	4 2369 73210	Connector 6P	1
CN9	4 2369 73100	Connector 3P	1
J1	4 2359 71780	Jack 1P (Mike, Left)	1
J2	4 2359 73470	Jack 1P (Mike, Right)	1
J3	4 2359 75730	2P Pin Jack (PHONO)	1
J9	4 2359 71551	DIN (Record/Play)	1
S2	4 2319 73904	Slide Switch (Record/Play)	1
S3	4 2319 75480	Lever Switch (Mode)	1
S4	4 2319 75500	Lever Switch (Function)	1
S5	4 2319 75490	Lever Switch (DOLBY NR)	1
S6	4 2319 75480	Lever Switch (Tape Select)	1
S7	4 2319 75510	Slide Switch (Input Select)	1
S8	4 2319 72170	Slide Switch (OSC)	1
L101	4 2599 70670	Coil DOLBY	1
L102	4 2599 70660	Coil	1
L103	4 2559 70130	Coil (33mH)	1
L104	4 2729 70230	Coil (2.2mH)	1
L201	4 2599 70670	Coil DOLBY	1
L202	4 2599 70660	Coil	1
L203	4 2559 70130	Coil (33mH)	1
L204	4 2729 70230	Coil (2.2mH)	1
L303	4 2539 70301	Micro Inductor (100μH)	1
T301	4 2589 72000	OSC Trans	1
VR1	4 2229 73780	Volume Control Unit	1
P101	4 2229 72968	Potentiometer (B-20kΩ)	1
P102	4 2229 72971	Potentiometer (B-100kΩ)	1
P103	4 2229 72968	Potentiometer (B-20kΩ)	1
P201	4 2229 72968	Potentiometer (B-20kΩ)	1
P202	4 2229 73300	Potentiometer (B-100kΩ)	1
P203	4 2229 72968	Potentiometer (B-20kΩ)	1
D101	202 5 2810 44210	Diode, DS 442	1
D102	202 5 2810 44210	Diode, DS 442	1
D103	202 5 2810 44210	Diode, DS 442	1
D104	202 5 2810 44210	Diode, DS 442	1
D201	202 5 2810 44210	Diode, DS 442	1
D202	202 5 2810 44210	Diode, DS 442	1
D203	202 5 2810 44210	Diode, DS 442	1
D204	202 5 2810 44210	Diode, DS 442	1
D304	202 5 2810 44210	Diode, DS 442	1
D305	202 5 2810 44210	Diode, DS 442	1
D306	202 5 2810 44210	Diode, DS 442	1
D308	202 5 2810 44210	Diode, DS 442	1
D309	202 5 2810 44210	Diode, DS 442	1
D310	202 5 2810 44210	Diode, DS 442	1
D311	202 5 2810 44210	Diode, DS 442	1
D312	202 5 2450 13540	Diode, DS 135	1
D313	202 5 2810 44210	Diode, DS 442	1
D314	202 5 2810 44210	Diode, DS 442	1
D315	202 5 2810 44210	Diode, DS 442	1
D317	202 5 2810 44210	Diode, DS 442	1
D318	202 5 2810 44210	Diode, DS 442	1
D324	202 5 3200 03311	Diode, GZA 3.3X	1
D325	202 5 3200 03311	Diode, GZA 3.3X	1
D326	202 5 3210 05111	Diode, GZA-5.1X	1
D327	4 2029 72180	Diode, MTZ 10-B	1
D328	202 5 2810 44210	Diode, DS 442	1
D329	202 5 2810 44210	Diode, DS 442	1

Ref. No.	Part No.	Description	Q'ty
D332	202 5 3210 05111	Diode, GZA-5.1X	1
D333	202 5 2810 44210	Diode, DS 442	1
Q101	203 5 5000 53660	Transistor, 2SC536	1
Q102	203 5 5251 57169	Transistor, 2SC 1571	1
Q103	203 5 4921 01270	Transistor, 2SD1012	1
Q104	203 5 5210 53660	Transistor, 2SC 536	1
Q105	203 5 5210 53660	Transistor, 2SC 536	1
Q106	203 5 5251 57169	Transistor, 2SC 1571	1
Q107	203 5 4921 01270	Transistor, 2SD1012	1
Q109	203 5 4921 01270	Transistor, 2SD1012	1
Q110	203 5 5000 53660	Transistor, 2SC536	1
Q111	203 5 5251 57169	Transistor, 2SC 1571	1
Q112	203 5 4921 01260	Transistor, 2SD1012	1
Q201	203 5 5000 53660	Transistor, 2SC536	1
Q202	203 5 5251 57169	Transistor, 2SC 1571	1
Q203	203 5 4921 01270	Transistor, 2SD1012	1
Q204	203 5 5000 53660	Transistor, 2SC536	1
Q205	203 5 5000 53660	Transistor, 2SC536	1
Q206	203 5 5251 57169	Transistor, 2SC 1571	1
Q207	203 5 4921 01270	Transistor, 2SD1012	1
Q209	203 5 4921 01270	Transistor, 2SD1012	1
Q210	203 5 5000 53660	Transistor, 2SC536	1
Q211	203 5 5251 57169	Transistor, 2SC 1571	1
Q212	203 5 4921 01260	Transistor, 2SD1012	1
Q303	203 5 4570 73460	Transistor, 2SD 734	1
Q304	203 5 4570 73460	Transistor, 2SD 734	1
Q305	203 5 4570 73460	Transistor, 2SD 734	1
Q306	203 5 8620 32561	Transistor, 2SD325	1
Q307	203 5 7390 82590	Transistor, 2SB 825S	1
Q309	203 5 5000 53660	Transistor, 2SC536	1
Q310	203 5 5000 53660	Transistor, 2SC536	1
Q313	203 5 5000 53660	Transistor, 2SC536	1
Q314	203 5 4921 01270	Transistor, 2SD1012	1
IC101	4 2069 71230	IC, LM 1111	1
IC201	4 2069 71230	IC, LM 1111	1
IC301	4 2069 71640	IC, BA343	1
IC302	206 5 1303 16110	IC, LA3161	1
C101	CM4 7 3500 K00SV	Mylar 0.047μF 50V $\pm$ 10%	1
C102	CM1 0 3500 K00SV	Mylar 0.01μF 50V $\pm$ 10%	1
C103	CC6 8 1500 KD00C	Ceramic 680pF 50V $\pm$ 10%	1
C104	CD1 0 6160 0001V	Electrolytic 10μF 16V	1
C105	CD4 7 6100 0001V	Electrolytic 47μF 10V	1
C106	CD3 3 6160 0001V	Electrolytic 33μF 16V	1
C107	CM1 0 3500 K00SV	Mylar 0.01μF 50V $\pm$ 10%	1
C108	CM1 8 3500 K00SV	Mylar 0.018μF 50V $\pm$ 10%	1
C109	CD1 0 5500 0001V	Electrolytic 1μF 50V	1
C110	CC2 2 1500 KD00C	Ceramic 220pF 50V $\pm$ 10%	1
C111	CD2 2 7160 0001V	Electrolytic 220μF 16V	1
C112	CA3 3 4160 K000V	Aluminum 0.33μF 16V $\pm$ 10%	1
C113	CA1 0 4160 K000V	Aluminum 0.1μF 16V $\pm$ 10%	1
C115	CD1 0 6160 0001V	Electrolytic 10μF 16V	1
C116	CM4 7 3500 K00SV	Mylar 0.047μF 50V $\pm$ 10%	1
C117	CC4 7 2500 KE00C	Ceramic 0.0047μF 50V $\pm$ 10%	1
C118	CC4 7 2500 KE00C	Ceramic 0.0047μF 50V $\pm$ 10%	1
C119	CD1 0 6160 0001V	Electrolytic 10μF 16V	1
C120	CD4 7 5160 0001V	Electrolytic 4.7μF 16V	1
C121	CD2 2 7160 0001V	Electrolytic 220μF 16V	1
C122	CC1 5 2500 KE00C	Ceramic 0.0015μF 50V $\pm$ 10%	1
C123	CM3 3 3500 K00SV	Mylar 0.033μF 50V $\pm$ 10%	1
C124	CD4 7 5160 0001V	Electrolytic 4.7μF 16V	1
C125	CC1 0 2500 KE00C	Ceramic 0.001μF 50V $\pm$ 10%	1
C126	CC1 0 2500 KE00C	Ceramic 0.001μF 50V $\pm$ 10%	1
C127	CD1 0 5500 0001V	Electrolytic 1μF 50V	1
C128	CD1 0 5500 0001V	Electrolytic 1μF 50V	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description			Q'ty
C129	CM47 3500 K00SV	Mylar	0.047μF	50V ± 10%	1
C130	CM47 3500 K00SV	Mylar	0.047μF	50V ± 10%	1
C131	CC33 0500 JD00C	Ceramic	33pF	50V ± 5%	1
C132	CD10 6160 0001V	Electrolytic	10μF	16V	1
C133	CC22 2500 KE00C	Ceramic	0.0022μF	50V ± 10%	1
C134	CC10 1500 KD00C	Ceramic	100pF	50V ± 10%	1
C135	CD10 5500 0001V	Electrolytic	1μF	50V	1
C136	CC68 1500 KD00C	Ceramic	680pF	50V ± 10%	1
C137	CD10 6160 0001V	Electrolytic	10μF	16V	1
C138	CC22 0500 JD00C	Ceramic	22pF	50V ± 5%	1
C139	CC39 2500 KE00C	Ceramic	0.0039μF	50V ± 10%	1
C140	CM33 3500 K00SV	Mylar	0.033μF	50V ± 10%	1
C141	CM33 3500 K00SV	Mylar	0.033μF	50V ± 10%	1
C142	CM10 4500 K00SV	Mylar	0.1μF	50V ± 10%	1
C143	CC15 2500 KE00C	Ceramic	0.0015μF	50V ± 10%	1
C144	CM10 4500 K00SV	Mylar	0.1μF	50V ± 10%	1
C153	CC22 1500 KD00C	Ceramic	220pF	50V ± 10%	1
C155	CC47 1500 KE00C	Ceramic	470pF	50V ± 10%	1
C156	CI10 4250 KE00C	Boundary	0.1μF	25V ± 10%	1
C157	CM12 3500 K00SV	Mylar	0.012μF	50V ± 10%	1
C158	CC33 1500 KD00C	Ceramic	330pF	50V ± 10%	1
C160	CD10 6160 0001V	Electrolytic	10μF	16V	1
C161	CC18 0500 JD00C	Ceramic	18pF	50V ± 5%	1
C162	CC56 1500 KD00C	Ceramic	560pF	50V ± 10%	1
C163	CD10 6160 0002V	Electrolytic	10μF	16V	1
C181	CC39 1500 KD00C	Ceramic	390pF	50V ± 10%	1
C182	CD10 6160 0001V	Electrolytic	10μF	16V	1
C183	CC10 1500 KD00C	Ceramic	100pF	50V ± 10%	1
C184	CD47 6100 0001V	Electrolytic	47μF	10V	1
C185	CM33 3500 K00SV	Mylar	0.033μF	50V ± 10%	1
C186	CM68 2500 K00SV	Mylar	0.0068μF	50V ± 10%	1
C187	CD10 6160 0001V	Electrolytic	10μF	16V	1
C188	CM68 2500 K00SV	Mylar	0.0068μF	50V ± 10%	1
C201	CM47 3500 K00SV	Mylar	0.047μF	50V ± 10%	1
C202	CM10 3500 K00SV	Mylar	0.01μF	50V ± 10%	1
C203	CC68 1500 KD00C	Ceramic	680pF	50V ± 10%	1
C204	CD10 6160 0001V	Electrolytic	10μF	16V	1
C205	CD47 6100 0001V	Electrolytic	47μF	10V	1
C206	CD33 6160 0001V	Electrolytic	33μF	16V	1
C207	CM10 3500 K00SV	Mylar	0.01μF	50V ± 10%	1
C208	CM18 3500 K00SV	Mylar	0.018μF	50V ± 10%	1
C209	CD10 5500 0001V	Electrolytic	1μF	50V	1
C210	CC22 1500 KD00C	Ceramic	220pF	50V ± 10%	1
C211	CD22 7160 0001V	Electrolytic	220μF	16V	1
C212	CA33 4160 K000V	Aluminum	0.33μF	16V ± 10%	1
C213	CA10 4160 K000V	Aluminum	0.1μF	16V ± 10%	1
C215	CD10 6160 0001V	Electrolytic	10μF	16V	1
C216	CM47 3500 K00SV	Mylar	0.047μF	50V ± 10%	1
C217	CC47 2500 KE00C	Ceramic	0.0047μF	50V ± 10%	1
C218	CC47 2500 KE00C	Ceramic	0.0047μF	50V ± 10%	1
C219	CD10 6160 0001V	Electrolytic	10μF	16V	1
C220	CD47 5160 0001V	Electrolytic	4.7μF	16V	1
C221	CD22 7160 0001V	Electrolytic	220μF	16V	1
C222	CC15 2500 KE00C	Ceramic	0.0015μF	50V ± 10%	1
C223	CM33 3500 K00SV	Mylar	0.033μF	50V ± 10%	1
C224	CD47 5160 0001V	Electrolytic	4.7μF	16V	1
C225	CC10 2500 KE00C	Ceramic	0.001μF	50V ± 10%	1
C226	CC10 2500 KE00C	Ceramic	0.001μF	50V ± 10%	1
C227	CD10 5500 0001V	Electrolytic	1μF	50V	1
C228	CD10 5500 0001V	Electrolytic	1μF	50V	1
C229	CM47 3500 K00SV	Mylar	0.047μF	50V ± 10%	1
C230	CM47 3500 K00SV	Mylar	0.047μF	50V ± 10%	1
C231	CC33 0500 JD00C	Ceramic	33pF	50V ± 5%	1
C232	CD10 6160 0001V	Electrolytic	10μF	16V	1

Ref. No.	Part No.	Description			Q'ty
C233	CC22 2500 KE00C	Ceramic	0.0022μF	50V ± 10%	1
C234	CC10 1500 KD00C	Ceramic	100pF	50V ± 10%	1
C235	CD10 5500 0001V	Electrolytic	1μF	50V	1
C236	CC68 1500 KD00C	Ceramic	680pF	50V ± 10%	1
C237	CD10 6160 0001V	Electrolytic	10μF	16V	1
C238	CC22 0500 JD00C	Ceramic	22pF	50V ± 5%	1
C239	CC39 2500 KE00C	Ceramic	0.0039μF	50V ± 10%	1
C240	CM33 3500 K00SV	Mylar	0.033μF	50V ± 10%	1
C241	CM33 3500 K00SV	Mylar	0.033μF	50V ± 10%	1
C242	CM10 4500 K00SV	Mylar	0.1μF	50V ± 10%	1
C243	CC15 2500 KE00C	Ceramic	0.0015μF	50V ± 10%	1
C244	CM10 4500 K00SV	Mylar	0.1μF	50V ± 10%	1
C253	CC22 1500 KD00C	Ceramic	220pF	50V ± 10%	1
C255	CC47 1500 KE00C	Ceramic	470pF	50V ± 10%	1
C256	CI10 4250 KE00C	Boundary	0.1μF	25V ± 10%	1
C257	CM12 3500 K00SV	Mylar	0.012μF	50V ± 10%	1
C258	CC33 1500 KD00C	Ceramic	330μF	50V ± 10%	1
C260	CD10 6160 0001V	Electrolytic	10μF	16V	1
C261	CC18 0500 JD00C	Ceramic	18pF	50V ± 5%	1
C262	CC56 1500 KD00C	Ceramic	560pF	50V ± 10%	1
C263	CD10 6160 0002V	Electrolytic	10μF	16V	1
C281	CC39 1500 KD00C	Ceramic	390pF	50V ± 10%	1
C282	CD10 6160 0001V	Electrolytic	10μF	16V	1
C283	CC10 1500 KD00C	Ceramic	100pF	50V ± 10%	1
C284	CD47 6100 0001V	Electrolytic	47μF	10V	1
C285	CM33 3500 K00SV	Mylar	0.033μF	50V ± 10%	1
C286	CM68 2500 K00SV	Mylar	0.0068μF	50V ± 10%	1
C287	CD10 6160 0001V	Electrolytic	10μF	16V	1
C288	CM68 2500 K00SV	Mylar	0.0068μF	50V ± 10%	1
C301	CD10 7160 0001V	Electrolytic	100μF	16V	1
C302	CD33 6160 0001V	Electrolytic	33μF	16V	1
C303	CD10 8160 0001V	Electrolytic	1000μF	16V	1
C304	CD22 7160 0001V	Electrolytic	220μF	16V	1
C305	CD22 7160 0001V	Electrolytic	220μF	16V	1
C306	CD22 7160 0001V	Electrolytic	220μF	16V	1
C307	CD22 6100 0001V	Electrolytic	22μF	10V	1
C317	CC47 2500 KE00C	Ceramic	0.0047μF	50V ± 10%	1
C318	CC47 2500 KE00C	Ceramic	0.0047μF	50V ± 10%	1
C319	CM15 3500 K00SV	Mylar	0.015μF	50V ± 10%	1
C320	CM33 3500 K00SV	Mylar	0.033μF	50V ± 10%	1
C321	CD10 5500 0001V	Electrolytic	1μF	50V	1
C322	CD10 6160 0001V	Electrolytic	10μF	16V	1
C323	CP39 2101 J000V	Polypropylen	0.0039μF	100V ± 5%	1
C324	CC15 2500 KE00C	Ceramic	0.0015μF	50V ± 10%	1
C325	CM68 2500 K00SV	Mylar	0.0068μF	50V ± 10%	1
C331	CD10 6160 0001V	Electrolytic	10μF	16V	1
C332	CD10 6160 0001V	Electrolytic	10μF	16V	1
C333	CD22 7160 0001V	Electrolytic	220μF	16V	1
C334	CD22 7160 0001V	Electrolytic	220μF	16V	1
C335	CC10 2500 KE00C	Ceramic	0.001μF	50V ± 10%	1
C336	CC10 2500 KE00C	Ceramic	0.001μF	50V ± 10%	1
C340	CD10 7160 0001V	Electrolytic	100μF	16V	1
C341	CD10 7160 0001V	Electrolytic	100μF	16V	1
C342	CD10 6160 0001V	Electrolytic	10μF	16V	1
C344	CD10 6160 0001V	Electrolytic	10μF	16V	1
C346	CD22 7160 0001V	Electrolytic	220μF	16V	1
C347	CD10 6160 0001V	Electrolytic	10μF	16V	1
C351	CD22 7160 0001V	Electrolytic	220μF	16V	1
R101	RP47 1121 JH000	Pretty Carbon	470Ω	1/8W ± 5%	1
R102	RP47 2121 JH000	Pretty Carbon	4.7kΩ	1/8W ± 5%	1
R103	RD10 3251 JM000	Carbon	10kΩ	1/4W ± 5%	1
R104	RD10 0251 JM000	Carbon	10Ω	1/4W ± 5%	1
R105	RD22 4251 JM000	Carbon	220kΩ	1/4W ± 5%	1
R106	RD10 1251 JM000	Carbon	100Ω	1/4W ± 5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
R107	RD1 8 1251 JM000	Carbon	180Ω	1/4W	± 5%	1
R108	RD1 2 4251 JM000	Carbon	120kΩ	1/4W	± 5%	1
R109	RD1 0 4251 JM000	Carbon	100kΩ	1/4W	± 5%	1
R110	RD1 8 3251 JM000	Carbon	18kΩ	1/4W	± 5%	1
R111	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	± 5%	1
R112	RD1 3 3251 JM000	Carbon	13kΩ	1/4W	± 5%	1
R113	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	± 5%	1
R114	RD3 9 2251 JM000	Carbon	3.9kΩ	1/4W	± 5%	1
R115	RD1 0 5251 JM000	Carbon	1MΩ	1/4W	± 5%	1
R116	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	± 5%	1
R117	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W	± 5%	1
R118	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	± 5%	1
R119	RP2 7 3121 JH000	Pretty Carbon	27kΩ	1/8W	± 5%	1
R120	RD1 0 4251 JM000	Carbon	100kΩ	1/4W	± 5%	1
R121	4 2349 70430	Fuse Resistor	22Ω	1/4W	± 5%	1
R122	RD2 7 4251 JM000	Carbon	270kΩ	1/4W	± 5%	1
R123	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	± 5%	1
R124	RD1 5 4251 JM000	Carbon	150kΩ	1/4W	± 5%	1
R125	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	± 5%	1
R126	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	± 5%	1
R127	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	± 5%	1
R128	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	± 5%	1
R129	RD3 3 3251 JM000	Carbon	33kΩ	1/4W	± 5%	1
R130	RD3 3 1251 JM000	Carbon	330Ω	1/4W	± 5%	1
R131	RD5 6 1251 JM000	Carbon	560Ω	1/4W	± 5%	1
R132	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W	± 5%	1
R133	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	± 5%	1
R134	RD1 1 3251 JM000	Carbon	11kΩ	1/4W	± 5%	1
R135	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	± 5%	1
R136	RD1 8 3251 JM000	Carbon	18kΩ	1/4W	± 5%	1
R137	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	± 5%	1
R138	RD1 2 2251 JM000	Carbon	1.2kΩ	1/4W	± 5%	1
R139	RD1 8 4251 JM000	Carbon	180kΩ	1/4W	± 5%	1
R140	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	± 5%	1
R141	RD5 6 1251 JM000	Carbon	560Ω	1/4W	± 5%	1
R143	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	± 5%	1
R144	RP5 6 3121 JH000	Pretty Carbon	56kΩ	1/8W	± 5%	1
R145	RP1 0 3121 JH000	Pretty Carbon	10kΩ	1/8W	± 5%	1
R146	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	± 5%	1
R147	RD5 6 3251 JM000	Carbon	56kΩ	1/4W	± 5%	1
R148	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	± 5%	1
R149	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	± 5%	1
R150	RD6 8 0251 JM000	Carbon	68Ω	1/4W	± 5%	1
R151	RP2 2 2121 JH000	Pretty Carbon	2.2kΩ	1/8W	± 5%	1
R152	RD5 6 2251 JM000	Carbon	5.6kΩ	1/4W	± 5%	1
R153	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	± 5%	1
R154	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	± 5%	1
R155	RD3 3 1251 JM000	Carbon	330Ω	1/4W	± 5%	1
R156	RD1 0 2251 JM000	Carbon	1kΩ	1/4W	± 5%	1
R157	RD3 9 2251 JM000	Carbon	3.9kΩ	1/4W	± 5%	1
R158	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	± 5%	1
R165	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	± 5%	1
R166	RD1 0 3251 JM000	Carbon	10kΩ	1/4W	± 5%	1
R167	RD1 5 2251 JM000	Carbon	1.5kΩ	1/4W	± 5%	1
R169	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	± 5%	1
R170	RD4 7 0251 JM000	Carbon	47Ω	1/4W	± 5%	1
R171	RP2 2 4121 JH000	Pretty Carbon	220kΩ	1/8W	± 5%	1
R172	RP2 2 3121 JH000	Pretty Carbon	22kΩ	1/8W	± 5%	1
R173	RP2 7 4121 JH000	Pretty Carbon	270kΩ	1/8W	± 5%	1
R174	RP3 3 2121 JH000	Pretty Carbon	3.3kΩ	1/8W	± 5%	1
R175	RP3 3 1121 JH000	Pretty Carbon	330Ω	1/8W	± 5%	1
R176	RP5 6 3121 JH000	Pretty Carbon	56kΩ	1/8W	± 5%	1
R177	RP1 5 2121 JH000	Pretty Carbon	1.5kΩ	1/8W	± 5%	1
R180	RP2 2 2121 JH000	Pretty Carbon	2.2kΩ	1/8W	± 5%	1

Ref. No.	Part No.	Description				Q'ty
R181	RP4 7 3121 JH000	Pretty Carbon	47kΩ	1/8W	± 5%	1
R182	RD8 2 1251 JM000	Carbon	820Ω	1/4W	± 5%	1
R183	RP1 0 4121 JH000	Pretty Carbon	100kΩ	1/8W	± 5%	1
R184	RP1 0 3121 JH000	Pretty Carbon	10kΩ	1/8W	± 5%	1
R185	RP3 3 2121 JH000	Pretty Carbon	3.3kΩ	1/8W	± 5%	1
R188	RP2 2 3121 JH000	Pretty Carbon	22kΩ	1/8W	± 5%	1
R189	RP5 6 2121 JH000	Pretty Carbon	5.6kΩ	1/8W	± 5%	1
R201	RD4 7 1251 JM000	Carbon	470Ω	1/4W	± 5%	1
R202	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	± 5%	1
R203	RP1 0 3121 JH000	Pretty Carbon	10kΩ	1/8W	± 5%	1
R204	RD1 0 0251 JM000	Carbon	10Ω	1/4W	± 5%	1
R205	RD2 2 4251 JM000	Carbon	220kΩ	1/4W	± 5%	1
R206	RD1 0 1251 JM000	Carbon	100Ω	1/4W	± 5%	1
R207	RD1 8 1251 JM000	Carbon	180Ω	1/4W	± 5%	1
R208	RD1 2 4251 JM000	Carbon	120kΩ	1/4W	± 5%	1
R209	RD1 0 4251 JM000	Carbon	100kΩ	1/4W	± 5%	1
R210	RD1 8 3251 JM000	Carbon	18kΩ	1/4W	± 5%	1
R211	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	± 5%	1
R212	RD1 3 3251 JM000	Carbon	13kΩ	1/4W	± 5%	1
R213	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	± 5%	1
R214	RD3 9 2251 JM000	Carbon	3.9kΩ	1/4W	± 5%	1
R215	RD1 0 5251 JM000	Carbon	1MΩ	1/4W	± 5%	1
R216	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	± 5%	1
R217	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W	± 5%	1
R218	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	± 5%	1
R219	RP2 7 3121 JH000	Pretty Carbon	27kΩ	1/8W	± 5%	1
R220	RD1 0 4251 JM000	Carbon	100kΩ	1/4W	± 5%	1
R221	4 2349 70430	Fuse Resistor	22Ω	1/4W	± 5%	1
R222	RD2 7 4251 JM000	Carbon	270kΩ	1/4W	± 5%	1
R223	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	± 5%	1
R224	RD1 5 4251 JM000	Carbon	150kΩ	1/4W	± 5%	1
R225	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	± 5%	1
R226	RD4 7 3251 JM000	Carbon	47kΩ	1/4W	± 5%	1
R227	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	± 5%	1
R228	RD2 2 3251 JM000	Carbon	22kΩ	1/4W	± 5%	1
R229	RD3 3 3251 JM000	Carbon	33kΩ	1/4W	± 5%	1
R230	RD3 3 1251 JM000	Carbon	330Ω	1/4W	± 5%	1
R231	RD5 6 1251 JM000	Carbon	560Ω	1/4W	± 5%	1
R232	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W	± 5%	1
R233	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	± 5%	1
R234	RD1 1 3251 JM000	Carbon	11kΩ	1/4W	± 5%	1
R235	RP4 7 2121 JH000	Pretty Carbon	4.7kΩ	1/8W	± 5%	1
R236	RD1 8 3251 JM000	Carbon	18kΩ	1/4W	± 5%	1
R237	RP4 7 2121 JH000	Pretty Carbon	4.7kΩ	1/8W	± 5%	1
R238	RP1 2 2121 JH000	Pretty Carbon	1.2kΩ	1/8W	± 5%	1
R239	RD1 8 4251 JM000	Carbon	180kΩ	1/4W	± 5%	1
R240	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	± 5%	1
R241	RD5 6 1251 JM000	Carbon	560Ω	1/4W	± 5%	1
R243	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	± 5%	1
R244	RP5 6 3121 JH000	Pretty Carbon	56kΩ	1/8W	± 5%	1
R245	RP1 0 3121 JH000	Pretty Carbon	10kΩ	1/8W	± 5%	1
R246	RD3 3 2251 JM000	Carbon	3.3kΩ	1/4W	± 5%	1
R247	RD5 6 3251 JM000	Carbon	56kΩ	1/4W	± 5%	1
R248	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	± 5%	1
R249	RD3 3 4251 JM000	Carbon	330kΩ	1/4W	± 5%	1
R250	RD6 8 0251 JM000	Carbon	68Ω	1/4W	± 5%	1
R251	RP2 2 2121 JH000	Pretty Carbon	2.2kΩ	1/8W	± 5%	1
R252	RD5 6 2251 JM000	Carbon	5.6kΩ	1/4W	± 5%	1
R253	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W	± 5%	1
R254	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	± 5%	1
R255	RD3 3 1251 JM000	Carbon	330Ω	1/4W	± 5%	1
R256	RD1 0 2251 JM000	Carbon	1kΩ	1/4W	± 5%	1
R257	RD3 9 2251 JM000	Carbon	3.9kΩ	1/4W	± 5%	1
R258	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W	± 5%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description			Q'ty
R265	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W ± 5%	1
R266	RD1 0 3251 JM000	Carbon	10kΩ	1/4W ± 5%	1
R267	RD1 5 2251 JM000	Carbon	1.5kΩ	1/4W ± 5%	1
R269	RD4 7 2251 JM000	Carbon	4.7kΩ	1/4W ± 5%	1
R270	RD4 7 0251 JM000	Carbon	47Ω	1/4W ± 5%	1
R271	RD2 2 4251 JM000	Carbon	220kΩ	1/4W ± 5%	1
R272	RP2 2 3121 JH000	Pretty Carbon	22kΩ	1/8W ± 5%	1
R273	RP2 7 4121 JH000	Pretty Carbon	270kΩ	1/8W ± 5%	1
R274	RP3 3 2121 JH000	Pretty Carbon	3.3kΩ	1/8W ± 5%	1
R275	RP3 3 1121 JH000	Pretty Carbon	330Ω	1/8W ± 5%	1
R276	RP5 6 3121 JH000	Pretty Carbon	56kΩ	1/8W ± 5%	1
R277	RD1 5 2251 JM000	Carbon	1.5kΩ	1/4W ± 5%	1
R280	RP2 2 2121 JH000	Pretty Carbon	2.2kΩ	1/8W ± 5%	1
R281	RP4 7 3121 JH000	Pretty Carbon	47kΩ	1/8W ± 5%	1
R282	RP8 2 1121 JH000	Pretty Carbon	820Ω	1/8W ± 5%	1
R283	RP1 0 4121 JH000	Pretty Carbon	100kΩ	1/8W ± 5%	1
R284	RP1 0 3121 JH000	Pretty Carbon	10kΩ	1/8W ± 5%	1
R285	RP3 3 2121 JH000	Pretty Carbon	3.3kΩ	1/8W ± 5%	1
R288	RP2 2 3121 JH000	Pretty Carbon	22kΩ	1/8W ± 5%	1
R289	RP5 6 2121 JH000	Pretty Carbon	5.6kΩ	1/8W ± 5%	1
R301	RP2 2 2121 JH000	Pretty Carbon	2.2kΩ	1/8W ± 5%	1
R302	RD1 0 1251 JM000	Carbon	100Ω	1/4W ± 5%	1
R303	RP8 2 2121 JH000	Pretty Carbon	8.2kΩ	1/8W ± 5%	1
R304	4 2349 70420	Fuse Resistor	10Ω	1/4W ± 5%	1
R305	RD5 6 1251 JM000	Carbon	560Ω	1/4W ± 5%	1
R306	RD3 3 5251 JM000	Carbon	3.3MΩ	1/4W ± 5%	1
R307	RD4 7 0251 JM000	Carbon	47Ω	1/4W ± 5%	1
R308	RP8 2 2121 JH000	Pretty Carbon	8.2kΩ	1/8W ± 5%	1
R317	RH8 2 0501 JH000	Metal	82Ω	1/2W ± 5%	1
R318	RH1 1 1501 JH000	Metal	110Ω	1/2W ± 5%	1
R319	RH1 5 1501 JH000	Metal	150Ω	1/2W ± 5%	1
R320	RH4 7 0501 JH000	Metal	47Ω	1/2W ± 5%	1
R321	RH6 8 0501 KH000	Metal	68Ω	1/2W ± 10%	1
R322	RH8 2 0501 JH000	Metal	82Ω	1/2W ± 5%	1
R323	RD1 5 3251 JM000	Carbon	15kΩ	1/4W ± 5%	1
R324	RD1 5 3251 JM000	Carbon	15kΩ	1/4W ± 5%	1
R325	RD3 3 A251 JM000	Carbon	3.3Ω	1/4W ± 5%	1
R326	RD3 3 A251 JM000	Carbon	3.3Ω	1/4W ± 5%	1
R327	RD8 2 2251 JM000	Carbon	8.2kΩ	1/4W ± 5%	1
R329	RD3 3 3251 JM000	Carbon	33kΩ	1/4W ± 5%	1
R331	RD5 6 3251 JM000	Carbon	56kΩ	1/4W ± 5%	1
R332	RD1 0 4251 JM000	Carbon	100kΩ	1/4W ± 5%	1
R333	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W ± 5%	1
R335	RD5 6 A251 JM000	Carbon	5.6Ω	1/4W ± 5%	1
R336	RD4 7 1251 JM000	Carbon	470Ω	1/4W ± 5%	1
R339	4 2349 70420	Fuse Resistor	10Ω	1/4W ± 5%	1
R340	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W ± 5%	1
R341	RD8 2 2251 JM000	Carbon	8.2kΩ	1/4W ± 5%	1
R342	RD3 3 3251 JM000	Carbon	33kΩ	1/4W ± 5%	1
R343	RH2 2 1501 JH000	Metal	220Ω	1/2W ± 5%	1
R344	RH6 8 1501 KH000	Metal	680Ω	1/2W ± 10%	1
R346	RP5 6 2121 JH000	Pretty Carbon	5.6kΩ	1/8W ± 5%	1
R347	RD1 0 1251 JM000	Carbon	100Ω	1/4W ± 5%	1
R353	RD8 2 2251 JM000	Carbon	8.2kΩ	1/4W ± 5%	1
R354	RD1 8 2251 JM000	Carbon	1.8kΩ	1/4W ± 5%	1
R355	RP5 6 3121 JH000	Pretty Carbon	56kΩ	1/8W ± 5%	1
R356	RD3 3 3251 JM000	Carbon	33kΩ	1/4W ± 5%	1
R361	RD1 0 1251 JM000	Carbon	100Ω	1/4W ± 5%	1
R363	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W ± 5%	1
R364	RD1 0 4251 JM000	Carbon	100kΩ	1/4W ± 5%	1

RADIO TUNER P.C.B. ASSY

PCB2	4 1259 71790	Radio Tuner P.C.B. Assy	1

Ref. No.	Part No.	Description			Q'ty
	4 2369 70740	Pin RT			4
	4 2569 70740	IFT Case			1
	101 3 1302 60411	Screw, Pan Hd.	+M2.6x4		2
	141 2 3229 23000	Shield Plate			1
	141 2 3229 26000	Shield Plate Tuner			1
	141 2 4729 04700	Staple, 10mm			7
	141 2 4729 05000	Staple, 5mm			18
CN1	4 2359 75662	Connector 5P Assy			1
S1	4 2319 75060	Rotary Switch (Band Select)			1
L1	4 2599 70334	RF Coil			1
L2	4 2589 71960	FM OSC Trans			1
L3	4 2659 70130	Loading Coil			1
L4	4 2579 71240	Bar Antenna			1
L6	4 2729 70530	Low Pass Filter			1
L7	4 2729 70530	Low Pass Filter			1
L8	4 2539 70870	Band Pass Filter			1
T1	4 2569 70990	IFT 10.7MHz			1
T2	4 2569 70321	IFT			1
T3	4 2569 70331	IFT			1
T4	4 2579 70722	Antenna Coil			1
T5	4 2589 71400	OSC Trans			1
T6	4 2589 71410	OSC Trans			1
T7	4 2589 71420	OSC Trans			1
T8	4 2569 70952	IFT			1
T9	4 2569 70962	IFT			1
T10	4 2569 71122	IFT			1
TC1	4 2249 70290	Trimmer Condenser			1
TC2	4 2249 70350	Trimmer			1
TC3	4 2249 70290	Trimmer Condenser			1
TC4	4 2249 70290	Trimmer Condenser			1
TC5	4 2249 70350	Trimmer			1
PVC1	4 2249 70451	Variable Condenser			1
P1	4 2229 73620	Potentiometer (B-10kΩ)			1
P2	4 2229 73610	Potentiometer (B-1kΩ)			1
CF1	4 2539 70880	Ceramic Filter			1
CF2	4 2539 70880	Ceramic Filter			1
BF1	4 2539 70211	Ferrite Bead			1
D1	202 5 2810 44210	Diode, DS 442			1
D2	202 5 2810 44210	Diode, DS 442			1
D3	4 2029 70790	Diode, ITT410			1
D4	202 5 9110 18820	Diode, 1S 188			1
D5	202 5 9110 18820	Diode, 1S 188			1
D6	202 5 9110 18820	Diode, 1S 188			1
D7	202 5 3210 06210	Diode, GZA6.2I			1
D8	202 5 2810 44210	Diode, DS 442			1
Q1	4 2039 70380	Transistor, 2SC1674			1
Q2	4 2039 70460	Transistor, 2SC1675			1
Q3	4 2039 70460	Transistor, 2SC1675			1
Q4	4 2039 70100	Transistor, 2SC945			1
Q5	4 2039 70460	Transistor, 2SC1675			1
IC1	4 2069 70232	μPC1018			1
IC2	4 2069 70510	μPC 1197			1
C1	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C2	CI1 0 3250 MF00R	Boundary	0.01μF	25V ± 20%	1
C3	CC2 0 0500 JD00C	Ceramic	20pF	50V ± 5%	1
C4	CC3 0 A500 CD00C	Ceramic	3pF	50V ± 0.2pF	1
C5	CC2 0 A500 CD00C	Ceramic	2pF	50V ± 0.2pF	1
C6	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C7	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C8	CC1 8 0500 JD00C	Ceramic	18pF	50V ± 5%	1
C9	CC1 5 0500 JD00C	Ceramic	15pF	50V ± 5%	1
C10	CC1 5 0500 JD00C	Ceramic	15pF	50V ± 5%	1
C11	CC1 0 0500 JD00C	Ceramic	10pF	50V ± 5%	1
C12	CI1 0 3250 MF00R	Boundary	0.01μF	25V ± 20%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description			Q'ty
C13	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C14	CC3 0 A500 CD00C	Ceramic	3pF	50V ± 0.2pF	1
C15	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C17	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C18	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C19	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C20	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C21	CC2 2 1500 KE00C	Ceramic	220pF	50V ± 10%	1
C22	CC2 2 1500 KE00C	Ceramic	220pF	50V ± 10%	1
C23	CD4 7 5100 0000V	Electrolytic	4.7μF	10V	1
C24	CD4 7 5100 0000V	Electrolytic	4.7μF	10V	1
C25	CI4 7 3250 KF00C	Boundary	0.047μF	25V ± 10%	1
C26	CC1 5 0500 JD00C	Ceramic	15pF	50V ± 5%	1
C27	CC2 0 0500 JD00C	Ceramic	20pF	50V ± 5%	1
C28	CC6 0 A500 CD00C	Ceramic	6pF	50V ± 0.2pF	1
C29	CC2 5 0500 JD00C	Ceramic	25pF	50V ± 5%	1
C30	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C31	CS3 1 2500 J010F	Polystyroul	0.0031μF	50V ± 5%	1
C32	CS3 6 1500 J010F	Polystyroul	360pF	50V ± 5%	1
C33	CS2 0 1500 J010F	Polystyroul	200pF	50V ± 5%	1
C34	CC2 0 0500 JD00C	Ceramic	20pF	50V ± 5%	1
C35	CC1 5 0500 JD00C	Ceramic	15pF	50V ± 5%	1
C36	CC1 0 1500 JD00C	Ceramic	100pF	50V ± 5%	1
C37	CC5 0 A500 CD00C	Ceramic	5pF	50V ± 0.2pF	1
C38	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C39	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C40	CI1 0 3250 MF00R	Boundary	0.01μF	25V ± 20%	1
C41	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C42	CD2 2 6160 0000V	Electrolytic	22μF	16V	1
C43	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C44	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C45	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C46	CD2 2 6100 0000V	Electrolytic	22μF	10V	1
C47	CD1 0 4500 0002V	Electrolytic	0.1μF	50V	1
C48	CD1 0 7100 0000V	Electrolytic	100μF	10V	1
C49	CI4 7 3250 KF00C	Boundary	0.047μF	25V ± 10%	1
C50	CS4 7 1500 J010F	Polystyroul	470pF	50V ± 5%	1
C51	CD3 3 4500 0002V	Electrolytic	0.33μF	50V	1
C52	CD1 0 5100 0000V	Electrolytic	1μF	10V	1
C53	CD2 2 5100 0000V	Electrolytic	2.2μF	10V	1
C54	CI1 0 2500 KE00R	Boundary	0.001μF	50V ± 10%	1
C55	CI1 0 2500 KE00R	Boundary	0.001μF	50V ± 10%	1
C56	CD4 7 4500 0002V	Electrolytic	0.47μF	50V	1
C57	CD4 7 4500 0002V	Electrolytic	0.47μF	50V	1
C58	CM2 7 3500 K00SV	Mylar	0.027μF	50V ± 10%	1
C59	CM2 7 3500 K00SV	Mylar	0.027μF	50V ± 10%	1
C60	CD4 7 7100 0000V	Electrolytic	470μF	10V	1
C61	CI2 2 3250 KE00C	Boundary	0.022μF	25V ± 10%	1
C62	CD1 0 7100 0000V	Electrolytic	100μF	10V	1
C63	CI2 2 3250 KE00C	Boundary	0.022μF	25V ± 10%	1
C64	CC1 0 1500 JD00C	Ceramic	100pF	50V ± 5%	1
C65	CC1 5 0500 JD00C	Ceramic	15pF	50V ± 5%	1
C66	CC1 0 1500 JD00C	Ceramic	100pF	50V ± 5%	1
C67	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
C68	CC1 0 0500 JD00C	Ceramic	10pF	50V ± 5%	1
C69	CI2 2 3160 XG00R	Boundary	0.022μF	16V +40,-20%	1
R1	RP3 3 4121 JH000	Pretty Carbon	330kΩ	1/8W ± 5%	1
R2	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W ± 5%	1
R3	RP4 7 1121 JH000	Pretty Carbon	470Ω	1/8W ± 5%	1
R4	RP3 3 4121 JH000	Pretty Carbon	330kΩ	1/8W ± 5%	1
R5	RP1 0 3121 JH000	Pretty Carbon	10kΩ	1/8W ± 5%	1
R6	RP4 7 0121 JH000	Pretty Carbon	47Ω	1/8W ± 5%	1
R7	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W ± 5%	1
R8	RP4 7 4121 JH000	Pretty Carbon	470kΩ	1/8W ± 5%	1
R9	RP2 2 1121 JH000	Pretty Carbon	220Ω	1/8W ± 5%	1
R10	RP3 3 2121 JH000	Pretty Carbon	3.3kΩ	1/8W ± 5%	1
R11	RD3 3 4251 JM000	Carbon	330kΩ	1/4W ± 5%	1
R12	RP2 2 1121 JH000	Pretty Carbon	220Ω	1/8W ± 5%	1
R13	RP1 0 1121 JH000	Pretty Carbon	100Ω	1/8W ± 5%	1
R14	RP4 7 0121 JH000	Pretty Carbon	47Ω	1/8W ± 5%	1
R15	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W ± 5%	1
R16	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W ± 5%	1
R17	RP4 7 2121 JH000	Pretty Carbon	4.7kΩ	1/8W ± 5%	1
R18	RP4 7 2121 JH000	Pretty Carbon	4.7kΩ	1/8W ± 5%	1
R19	RP3 3 4121 JH000	Pretty Carbon	330kΩ	1/8W ± 5%	1
R20	RP3 3 4121 JH000	Pretty Carbon	330kΩ	1/8W ± 5%	1
R21	RP4 7 0121 JH000	Pretty Carbon	47Ω	1/8W ± 5%	1
R22	RP3 3 0121 JH000	Pretty Carbon	33Ω	1/8W ± 5%	1
R23	RP5 6 A121 JH000	Pretty Carbon	5.6Ω	1/8W ± 5%	1
R24	RP1 0 1121 JH000	Pretty Carbon	100Ω	1/8W ± 5%	1
R25	RD1 0 1251 JM000	Carbon	100Ω	1/4W ± 5%	1
R26	RP4 7 3121 JH000	Pretty Carbon	47kΩ	1/8W ± 5%	1
R27	RP1 0 3121 JH000	Pretty Carbon	10kΩ	1/8W ± 5%	1
R28	RP2 2 2121 JH000	Pretty Carbon	2.2kΩ	1/8W ± 5%	1
R29	RP4 7 2121 JH000	Pretty Carbon	4.7kΩ	1/8W ± 5%	1
R30	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W ± 5%	1
R31	RP2 2 3121 JH000	Pretty Carbon	22kΩ	1/8W ± 5%	1
R32	RP1 8 3121 JH000	Pretty Carbon	18kΩ	1/8W ± 5%	1
R33	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W ± 5%	1
R34	RP5 6 2121 JH000	Pretty Carbon	5.6kΩ	1/8W ± 5%	1
R35	RP5 6 2121 JH000	Pretty Carbon	5.6kΩ	1/8W ± 5%	1
R36	RP4 7 2121 JH000	Pretty Carbon	4.7kΩ	1/8W ± 5%	1
R37	RP4 7 2121 JH000	Pretty Carbon	4.7kΩ	1/8W ± 5%	1
R38	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W ± 5%	1
R39	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W ± 5%	1
R40	RD5 6 A251 JM000	Carbon	5.6Ω	1/4W ± 5%	1
R41	RD4 7 1251 JM000	Carbon	470Ω	1/4W ± 5%	1
R42	RD5 6 A251 JM000	Carbon	5.6Ω	1/4W ± 5%	1
R43	RP1 0 1121 JH000	Pretty Carbon	100Ω	1/8W ± 5%	1
R44	RD8 2 1251 JM000	Carbon	820Ω	1/4W ± 5%	1
R45	RP2 2 3121 JH000	Pretty Carbon	22kΩ	1/8W ± 5%	1
R46	RP2 2 3121 JH000	Pretty Carbon	22kΩ	1/8W ± 5%	1
R47	RP1 0 1121 JH000	Pretty Carbon	100Ω	1/8W ± 5%	1
R48	RP1 0 4121 JH000	Pretty Carbon	100kΩ	1/8W ± 5%	1
R49	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W ± 5%	1
R50	RP4 7 2121 JH000	Pretty Carbon	4.7kΩ	1/8W ± 5%	1
R51	RP1 0 2121 JH000	Pretty Carbon	1kΩ	1/8W ± 5%	1
R52	RP2 2 2121 JH000	Pretty Carbon	2.2kΩ	1/8W ± 5%	1

AMSS CONTROL P.C.B. ASSY

PCB3	4 1329 77840	AMSS Control P.C.B. Assy			1
	141 2 1659 03200	AMSS Knob			1
	141 2 3749 08600	LED Holder			1
CN10	4 2359 75670	Connector 6P Assy			1
S9	4 2319 74340	Peck Switch (AMSS Program)			1
D501	202 5 9600 44610	Diode, DS 446			1
D502	4 2029 72020	LED, GL-9PR4 (AMSS1)			1
D503	4 2029 72020	LED, GL-9PR4 (AMSS2)			1
D504	4 2029 72020	LED, GL-9PR4 (AMSS3)			1
D505	4 2029 72020	LED, GL-9PR4 (DOLBY)			1
D506	202 5 2810 44255	Diode, DS442			1
Q501	203 5 5100 53660	Transistor, 2SC 536			1
Q502	203 5 5100 53660	Transistor, 2SC 536			1
IC501	206 5 9417 51010	IC, LC7510			1
C501	CI1 0 3250 KF00C	Boundary	0.01μF	25V ± 10%	1
C502	CI6 8 2250 KF00C	Boundary	0.0068μF	25V ± 10%	1
C503	CI6 8 2250 KF00C	Boundary	0.0068μF	25V ± 10%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description			Q'ty
C504	CD1 0 5160 0000V	Electrolytic	1μF	16V	1
C505	CI1 0 3250 KF00C	Boundary	0.01μF	25V ± 10%	1
C506	CD1 0 5160 0000V	Electrolytic	1μF	16V	1
C507	CD1 0 5160 0000V	Electrolytic	1μF	16V	1
C508	CD1 0 6160 0002V	Electrolytic	10μF	16V	1
R501	RD2 7 4251 JN000	Carbon	270kΩ	1/4W ± 5%	1
R502	RD2 2 2251 JN000	Carbon	2.2kΩ	1/4W ± 5%	1
R503	RD1 8 1251 JN000	Carbon	180Ω	1/4W ± 5%	1
R504	RD5 6 2251 JN000	Carbon	5.6kΩ	1/4W ± 5%	1
R505	RD1 0 2251 JN000	Carbon	1kΩ	1/4W ± 5%	1
R506	RD5 6 3251 JN000	Carbon	56kΩ	1/4W ± 5%	1
R507	RD1 5 4251 JN000	Carbon	150kΩ	1/4W ± 5%	1
R508	RP1 8 4121 JT000	Pretty Carbon	180kΩ	1/8W ± 5%	1
R509	RD1 0 2251 JN000	Carbon	1kΩ	1/4W ± 5%	1
R510	RP1 8 4121 JT000	Pretty Carbon	180kΩ	1/8W ± 5%	1
R511	RP1 2 4121 JT000	Pretty Carbon	120kΩ	1/8W ± 5%	1
R512	RD1 8 2251 JN000	Carbon	1.8kΩ	1/4W ± 5%	1
R513	RP4 7 2121 JT000	Pretty Carbon	4.7kΩ	1/8W ± 5%	1
R514	RP2 2 3121 JT000	Pretty Carbon	22kΩ	1/8W ± 5%	1
	LED INDICATOR P.C.B. ASSY				
PCB4	4 1329 77860	LED Indicator P.C.B. Assy			1
	4 2269 37150	PCB, LED			1
CN6	4 2359 75548	Connector 6P Assy			1
S10	4 2319 75470	Push Switch (Rec. Mute)			1
D301	4 2029 71420	LED, SLP-155B (Pause)			1
D302	4 2029 71420	LED, SLP-155B (Record)			1
D303	4 2029 71430	LED, SLP255 (Play)			1
	MIC. MIX. VOLUME P.C.B. ASSY				
PCB5	4 1329 77870	Mic. Mix. Volume P.C.B. Assy			1
	4 2269 37160	PCB, Volume			1
CN11	4 2359 75555	Connector 3P Assy			1
VR2	4 2229 73770	Control Volume (Mike Mixing, A-20kΩ)			1
	POWER AMPLIFIER P.C.B. ASSY				
PCB6	4 1329 77880	Power Amplifier P.C.B. Assy			1
	141 2 3689 08200	Radiator IC (for IC303)			1
	103 3 1303 01011	Screw, Pan Hd. Tapping-2	+M3.0x10		2
CN11	4 2369 71482	Connector 3P			1
CN12	4 2369 71881	Connector 8P			1
CN13	4 2369 71851	Connector 4P			1
CN14	4 2369 70740	RT Pin			1
CN15	4 2369 70740	RT Pin			1
J4	4 2359 73243	1P Jack (Headphones)			1
J5	4 2359 73241	Jack (Mike Mixing)			1
J6	4 2359 71392	1P Jack (Ext. Speaker, Left)			1
J7	4 2359 71392	1P Jack (Ext. Speaker, Right)			1
D331	4 2029 72190	Diode, MTZ 11-B			1
Q108	4 2039 70431	Transistor, 2SC 1815			1
Q208	4 2039 70431	Transistor, 2SC 1815			1
Q301	203 5 5251 57169	Transistor, 2SC 1571			1
Q302	203 5 5251 57169	Transistor, 2SC 1571			1
Q312	203 5 6900 40060	Transistor, 2SD400			1
IC303	206 5 1984 50510	IC, LA 4505			1
C145	CD1 0 5100 0000V	Electrolytic	1μF	10V	1
C146	CC1 0 2500 KE00C	Ceramic	0.001μF	50V ± 10%	1
C147	CD2 2 6250 0001V	Electrolytic	22μF	25V	1
C148	CD2 2 8160 0001V	Electrolytic	2200μF	16V	1
C149	CM1 5 4500 K00SV	Mylar	0.15μF	50V ± 10%	1
C150	CD1 0 7160 0001V	Electrolytic	100μF	16V	1

Ref. No.	Part No.	Description			Q'ty
C151	CI1 0 3250 KF00C	Boundary	0.01μF	25V ± 10%	1
C245	CD1 0 5100 0000V	Electrolytic	1μF	10V	1
C246	CC1 0 2500 KE00C	Ceramic	0.001μF	50V ± 10%	1
C247	CD2 2 6250 0001V	Electrolytic	22μF	25V	1
C248	CD2 2 8160 0001V	Electrolytic	2200μF	16V	1
C249	CM1 5 4500 K00SV	Mylar	0.15μF	50V ± 10%	1
C250	CD1 0 7160 0001V	Electrolytic	100μF	16V	1
C251	CI1 0 3250 KF00C	Boundary	0.01μF	25V ± 10%	1
C308	CC2 2 2500 KE00C	Ceramic	0.0022μF	50V ± 10%	1
C309	CC6 8 1500 KE00C	Ceramic	680pF	50V ± 10%	1
C310	CD4 7 4160 0000V	Electrolytic	0.47μF	16V	1
C311	CC6 8 1500 KE00C	Ceramic	680pF	50V ± 10%	1
C312	CD1 0 5160 0000V	Electrolytic	1μF	16V	1
C313	CD4 7 4160 0000V	Electrolytic	0.47μF	16V	1
C314	CC6 8 1500 KE00C	Ceramic	680pF	50V ± 10%	1
C315	CD1 0 5160 0000V	Electrolytic	1μF	16V	1
C316	CD4 7 7160 0001V	Electrolytic	470μF	16V	1
C326	CD1 0 8160 0001V	Electrolytic	1000μF	16V	1
C327	CD1 0 7160 0001V	Electrolytic	100μF	16V	1
C328	CD1 0 7100 0001V	Electrolytic	100μF	10V	1
C329	CD2 2 8250 0001V	Electrolytic	2200μF	25V	1
C348	CC1 0 2500 KE00C	Ceramic	0.001μF	50V ± 10%	1
C350	CD1 0 6160 0000V	Electrolytic	10μF	16V	1
R159	RD1 0 1251 JM000	Carbon	100Ω	1/4W ± 5%	1
R160	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W ± 5%	1
R161	RD1 0 3251 JM000	Carbon	10kΩ	1/4W ± 5%	1
R162	RD1 0 2251 JM000	Carbon	1kΩ	1/4W ± 5%	1
R163	RD2 2 1251 JM000	Carbon	220Ω	1/4W ± 5%	1
R168	RD1 5 2251 JM000	Carbon	1.5kΩ	1/4W ± 5%	1
R259	RD1 0 1251 JM000	Carbon	100Ω	1/4W ± 5%	1
R260	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W ± 5%	1
R261	RD1 0 3251 JM000	Carbon	10kΩ	1/4W ± 5%	1
R262	RD1 0 2251 JM000	Carbon	1kΩ	1/4W ± 5%	1
R263	RD2 2 1251 JM000	Carbon	220Ω	1/4W ± 5%	1
R268	RD1 5 2251 JM000	Carbon	1.5kΩ	1/4W ± 5%	1
R309	RD4 7 1251 JM000	Carbon	470Ω	1/4W ± 5%	1
R310	RD1 0 3251 JM000	Carbon	10kΩ	1/4W ± 5%	1
R311	RD1 0 2251 JM000	Carbon	1kΩ	1/4W ± 5%	1
R312	RD1 0 1251 JM000	Carbon	100Ω	1/4W ± 5%	1
R313	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W ± 5%	1
R314	RD6 8 4251 JM000	Carbon	680kΩ	1/4W ± 5%	1
R315	RD2 2 2251 JM000	Carbon	2.2kΩ	1/4W ± 5%	1
R316	RD4 7 4251 JM000	Carbon	470kΩ	1/4W ± 5%	1
R330	RD5 6 3251 JM000	Carbon	56kΩ	1/4W ± 5%	1
R357	RD1 8 1251 JM000	Carbon	180Ω	1/4W ± 5%	1
R359	RD1 0 2251 JM000	Carbon	1kΩ	1/4W ± 5%	1
R360	RD1 0 0251 JM000	Carbon	10Ω	1/4W ± 5%	1
	POWER SUPPLY P.C.B. ASSY				
PCB7	4 1969 70014	Power Supply P.C.B. Assy			1
	⚠4 2359 70910	Holder Fuse			2
	141 2 4729 07900	Staple, 7.5mm			3
J8	⚠4 2359 75682	AC/DC Power Jack			1
S19	⚠4 2319 75350	Rotary Switch (Voltage Select)			1
	4 2359 70990	Socket Pin RT			1
T901	⚠4 2519 73672	Power Trans			1
F1	⚠4 2349 70460	Fuse T3.15A			1
D901	202 5 2450 13540	Diode, DS 135			1
D902	202 5 2450 13540	Diode, DS 135			1
D903	202 5 2450 13540	Diode, DS 135			1
D904	202 5 2450 13540	Diode, DS 135			1
C901	CD4 7 8250 0001V	Electrolytic	4700μF	25V	1
C902	CI1 0 4250 KF00C	Boundary	0.1μF	25V ± 10%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C903	CI1 0 4250 KF00C	Boundary	0.1μF	25V	± 10%	1
C904	CI1 0 4250 KF00C	Boundary	0.1μF	25V	± 10%	1
C905	CI1 0 4250 KF00C	Boundary	0.1μF	25V	± 10%	1
	LED METER P.C.B. ASSY					
PCB8	4 5119 70780	LED Meter P.C.B. Assy				1
	141 2 4729 04700	Staple, 10mm				1
CN7	4 2359 75547	Connector 6P Assy				1
L801	4 2539 71120	Choke Coil (330μH)				1
D801	4 2029 72030	LED, GL-9PR34 (FM Stereo)				1
D802	4 2029 72030	LED, GL-9PR34 (Operation)				1
D803	4 2029 72030	LED, GL-9PR34 (Level Meter)				1
D804	4 2029 72030	LED, GL-9PR34 (Level Meter)				1
D805	4 2029 72030	LED, GL-9PR34 (Level Meter)				1
D806	4 2029 72030	LED, GL-9PR34 (Level Meter)				1
D807	4 2029 72030	LED, GL-9PR34 (Level Meter)				1
IC81	206 5 2341 41610	IC, LB1416				1
C801	CD3 3 7100 0000V	Electrolytic	330μF	10V		1
C802	CD1 0 6160 0000V	Electrolytic	10μF	16V		1
C803	CD4 7 5500 0000V	Electrolytic	4.7μF	50V		1
R801	RD1 0 3251 JN000	Carbon	10kΩ	1/4W	± 5%	1
R802	RD1 0 3251 JN000	Carbon	10kΩ	1/4W	± 5%	1
R803	RD5 6 2251 JN000	Carbon	5.6kΩ	1/4W	± 5%	1
R804	RD5 6 2251 JN000	Carbon	5.6kΩ	1/4W	± 5%	1
R805	RD1 0 3251 JN000	Carbon	10kΩ	1/4W	± 5%	1
R806	RD1 0 4251 JN000	Carbon	100kΩ	1/4W	± 5%	1
R807	RD1 5 3251 JN000	Carbon	15kΩ	1/4W	± 5%	1
R808	RD1 5 1251 JN000	Carbon	150Ω	1/4W	± 5%	1
R809	RD1 5 1251 JN000	Carbon	150Ω	1/4W	± 5%	1
R810	RD1 5 1251 JN000	Carbon	150Ω	1/4W	± 5%	1
R811	RD1 5 1251 JN000	Carbon	150Ω	1/4W	± 5%	1
R812	RD1 5 1251 JN000	Carbon	150Ω	1/4W	± 5%	1
R813	RD4 7 1251 JN000	Carbon	470Ω	1/4W	± 5%	1
R814	RD1 5 2251 JN000	Carbon	1.5kΩ	1/4W	± 5%	1
R815	RD2 0 2251 JN000	Carbon	2kΩ	1/4W	± 5%	1

Ref. No.	Part No.	Description				Q'ty
	TERMINAL P.C.B. ASSY					
PCB9	4 1329 77890	Terminal P.C.B. Assy				1
	141 2 4729 04700	Staple, 10mm				2
CN16	4 2369 71452	Connector 6P				1
CN17	4 2369 71891	Connector 11P Top				1
L301	4 2559 70031	Coil (33mH)				1
L302	4 2539 70301	Micro Inductor (100μH)				1
D316	202 5 2810 44255	Diode, DS442				1
D319	205 5 9040 44210	Diode, DS 442				1
D320	202 5 2810 44255	Diode, DS442				1
D322	202 5 2470 13540	Diode, DS135D				1
D323	202 5 2470 13540	Diode, DS135D				1
D332	202 5 2810 44255	Diode, DS442				1
Q308	203 5 6820 98460	Transistor, 2SA984				1
Q311	203 5 5100 53660	Transistor, 2SC 536				1
C338	CD1 0 7160 0001V	Electrolytic	100μF	16V		1
C343	CD2 2 7160 0001V	Electrolytic	220μF	16V		1
C345	CD1 0 6100 0000V	Electrolytic	10μF	10V		1
R328	RD2 2 2251 JS000	Carbon	2.2kΩ	1/4W	± 5%	1
R334	RD2 2 2251 JN000	Carbon	2.2kΩ	1/4W	± 5%	1
R337	RD1 0 2251 JN000	Carbon	1kΩ	1/4W	± 5%	1
R338	RD1 5 2251 JN000	Carbon	1.5kΩ	1/4W	± 5%	1
R345	RD1 2 4251 JN000	Carbon	120kΩ	1/4W	± 5%	1
R348	RD5 6 2251 JN000	Carbon	5.6kΩ	1/4W	± 5%	1
R349	RD5 6 2251 JS000	Carbon	5.6kΩ	1/4W	± 5%	1
R350	RD8 2 2251 JN000	Carbon	8.2kΩ	1/4W	± 5%	1
R351	RD5 6 1251 JS000	Carbon	560Ω	1/4W	± 5%	1
R352	RD5 6 2251 JN000	Carbon	5.6kΩ	1/4W	± 5%	1

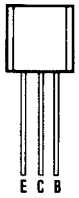
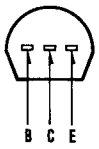
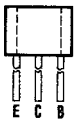
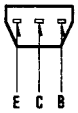
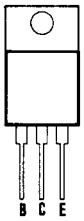
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

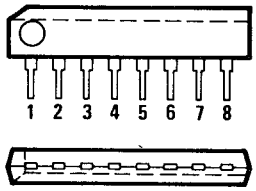
PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF AN UNIT. COMPONENTS INDICATED BY A MARK ⚠ IN THIS PARTS LIST AND THE SCHEMATIC DIAGRAM SHOW COMPONENTS WHOSE VALUE HAS SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS SPECIFIED ON THE FOLLOWING PARTS LIST BE USED FOR COMPONENT REPLACEMENT POINTED OUT BY THE MARK.

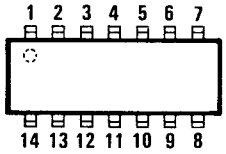
IC & TRANSISTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA984 2SC536 2SC945 2SC1571 2SC1674 2SC1675 2SC1815 2SD400 2SD734		
2SD1012		
2SB825 2SD325		
TERMINAL NAME		
B → BASE C → COLLECTOR E → EMITTER		

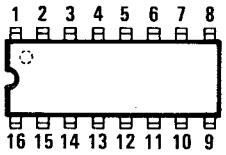
LA3161 FRONT/BOTTOM VIEW



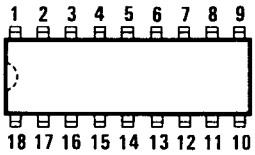
LM1111 BOTTOM VIEW



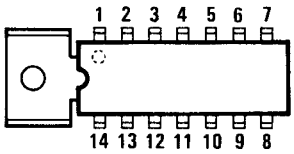
μPC1018
μPC1197 } **BOTTOM VIEW**
BA343



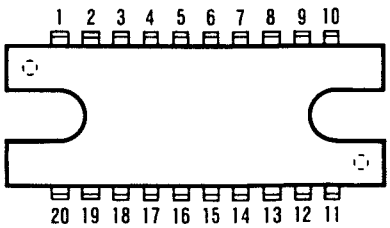
LC7510 BOTTOM VIEW



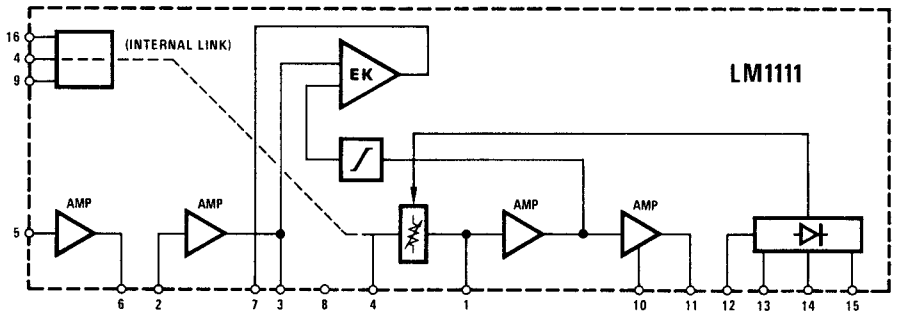
LB1416 BOTTOM VIEW



LA4505 BOTTOM VIEW

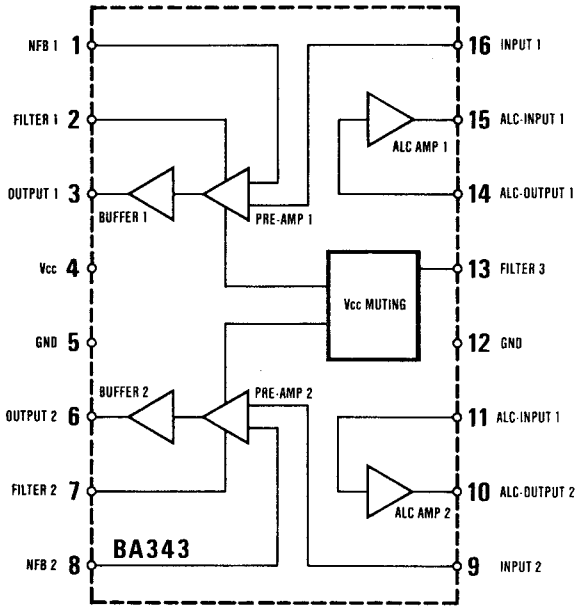


LM1111 BLOCK DIAGRAM

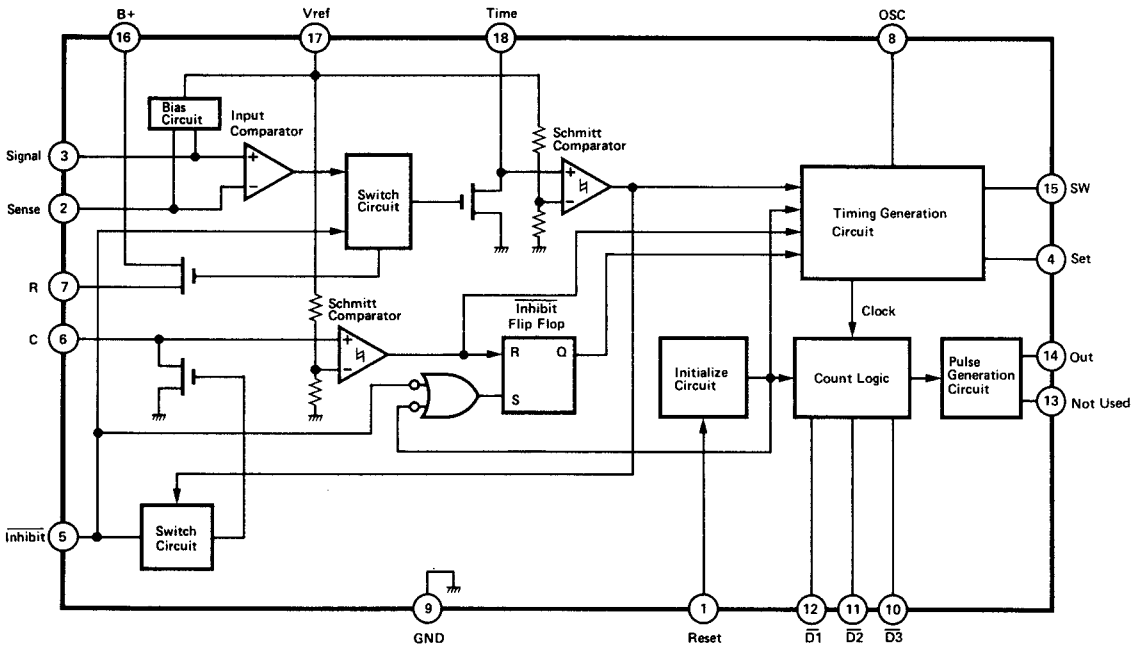


IC & TRANSISTOR LEAD IDENTIFICATION (Continued)

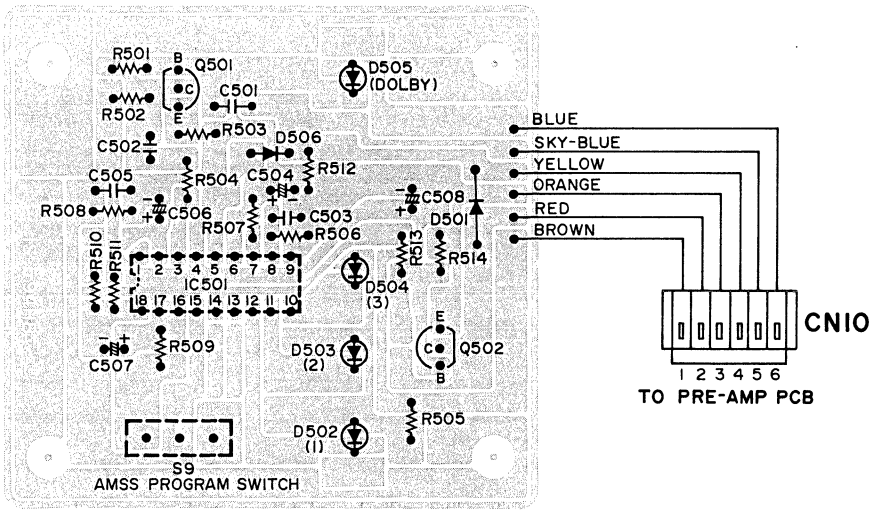
BA343 BLOCK DIAGRAM



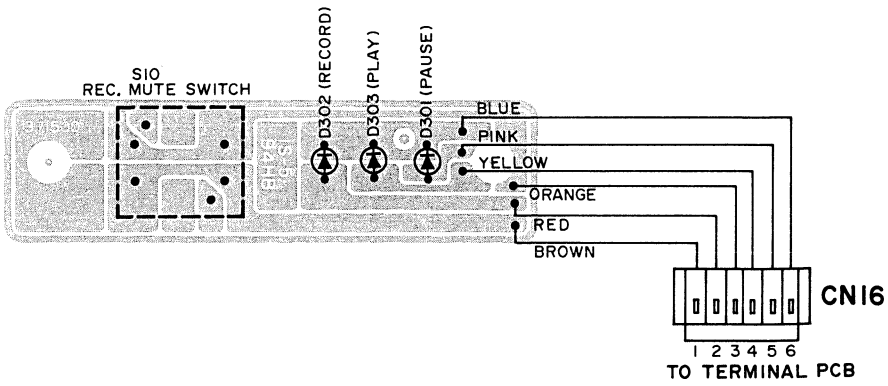
LC7510 BLOCK DIAGRAM



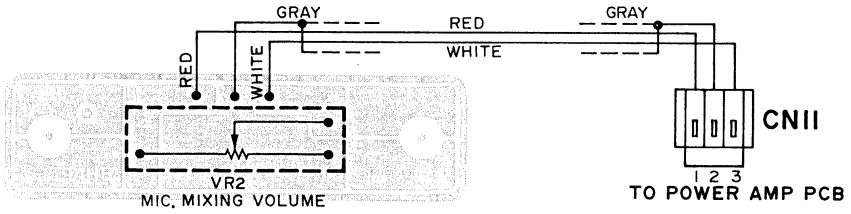
AMSS CONTROL P.C.BOARD



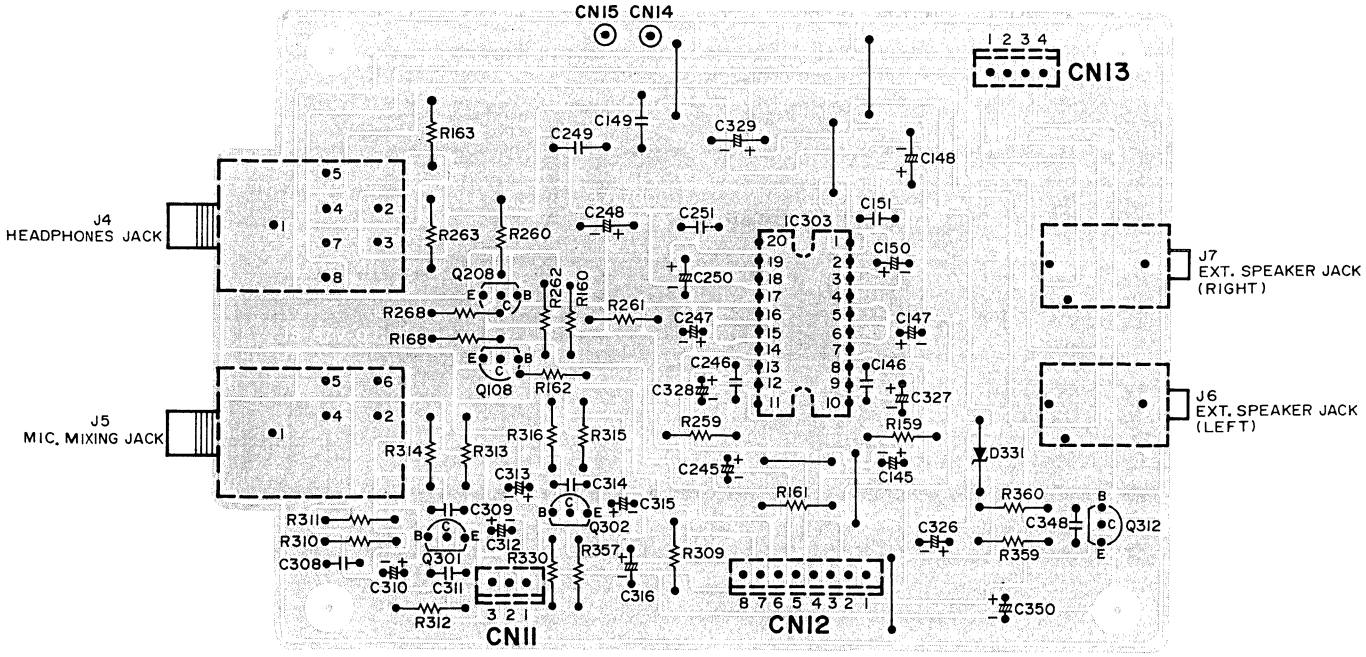
INDICATOR P.C.BOARD



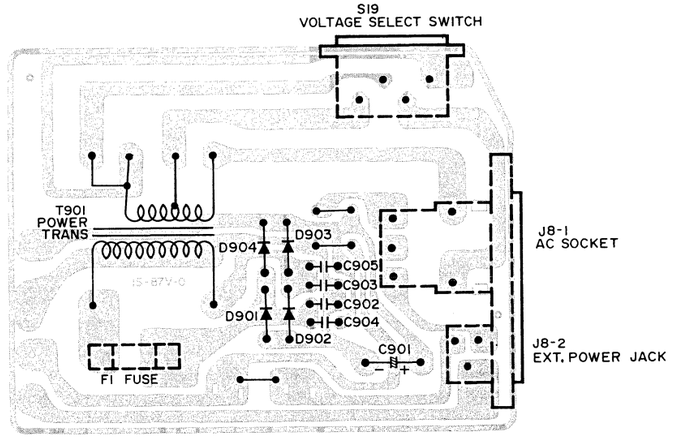
MIKE MIXING VOLUME P.C.BOARD



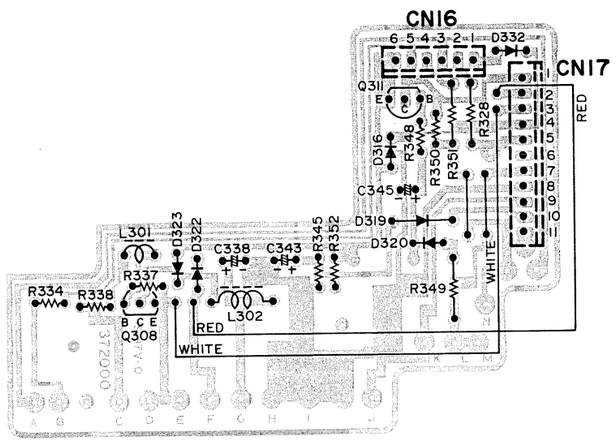
POWER AMPLIFIER P.C.BOARD



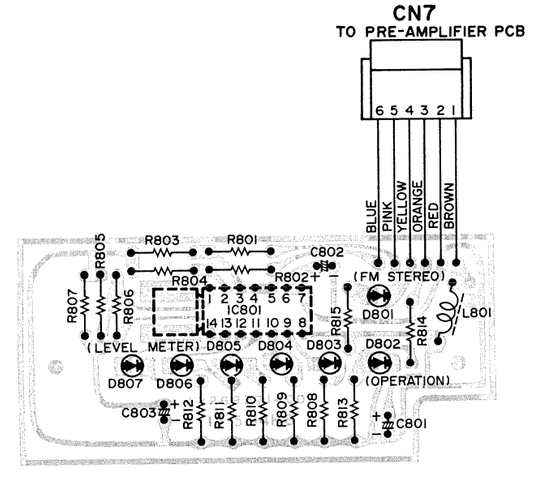
POWER SUPPLY P.C.BOARD



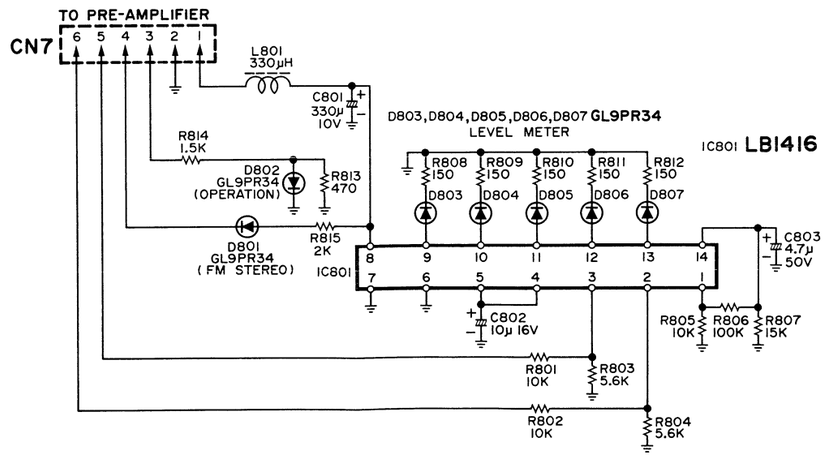
TERMINAL P.C.BOARD



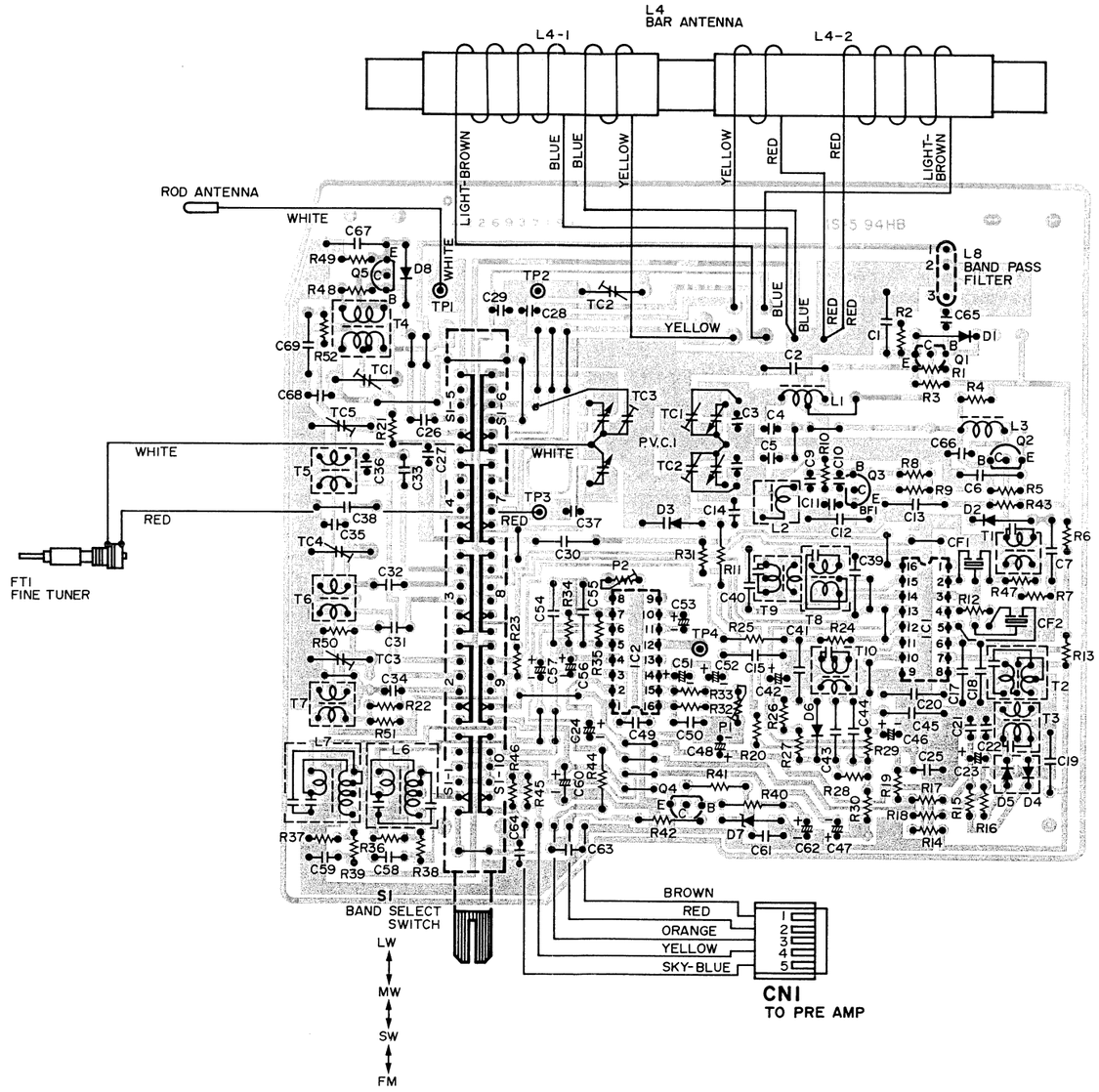
LED METER P.C.BOARD



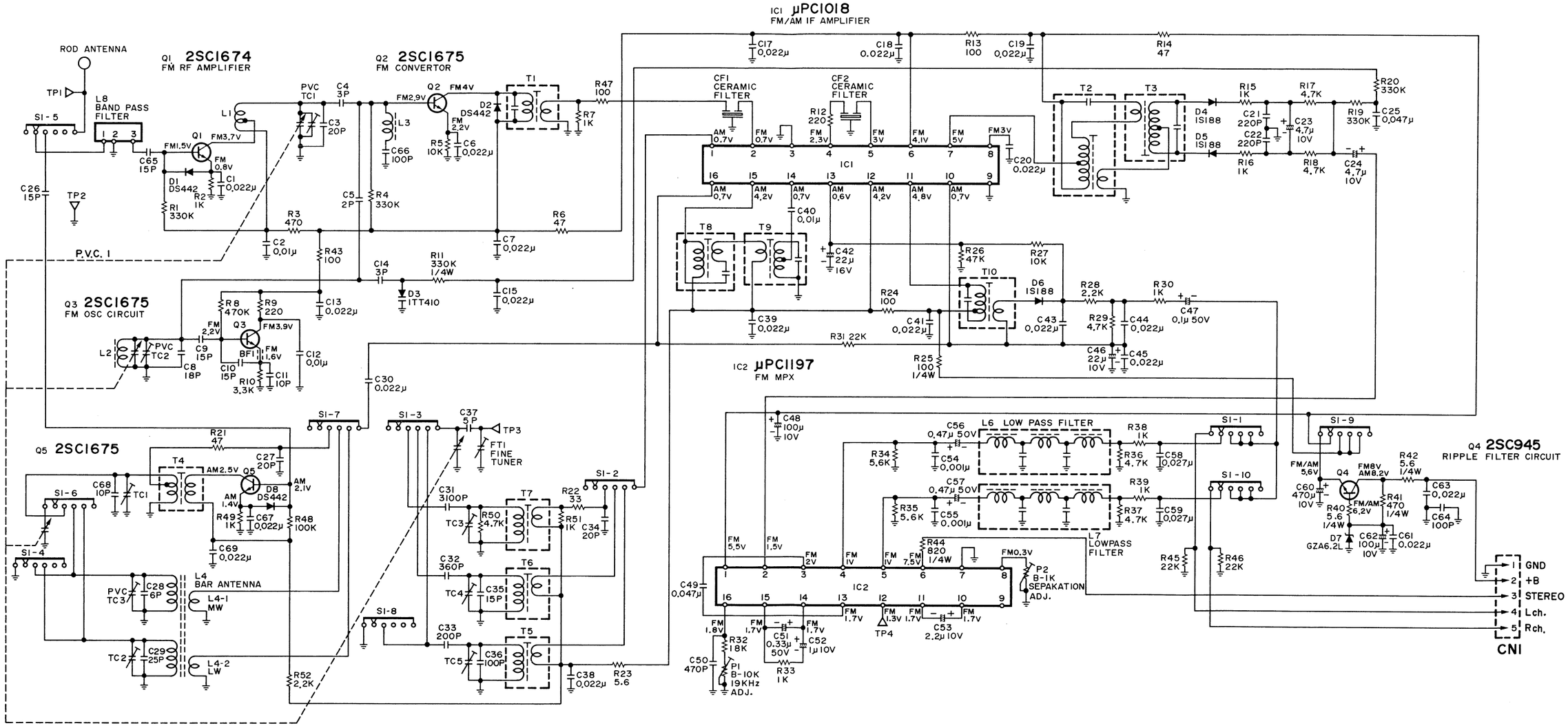
LED METER SCHEMATIC DIAGRAM



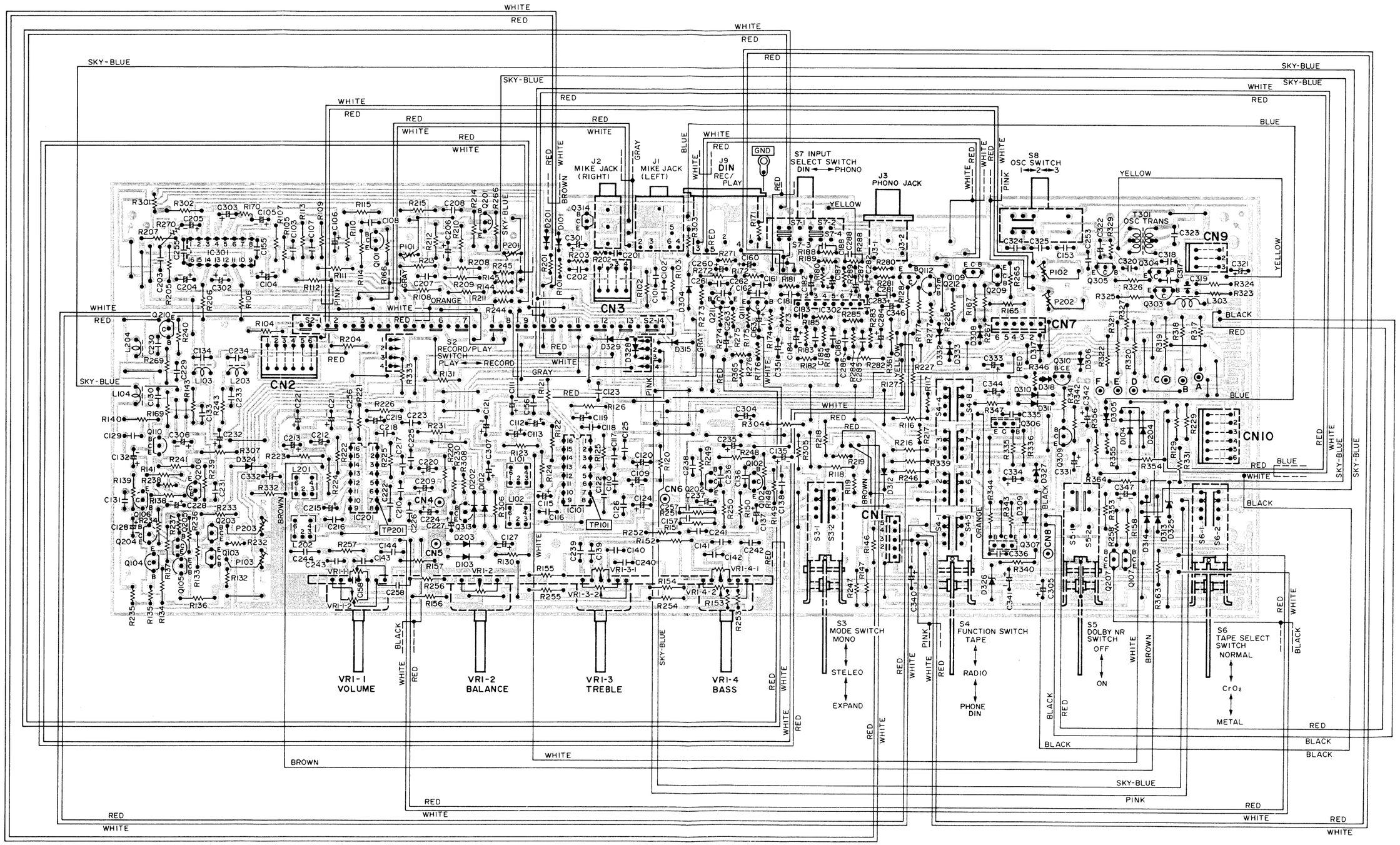
RADIO TUNER P.C.BOARD



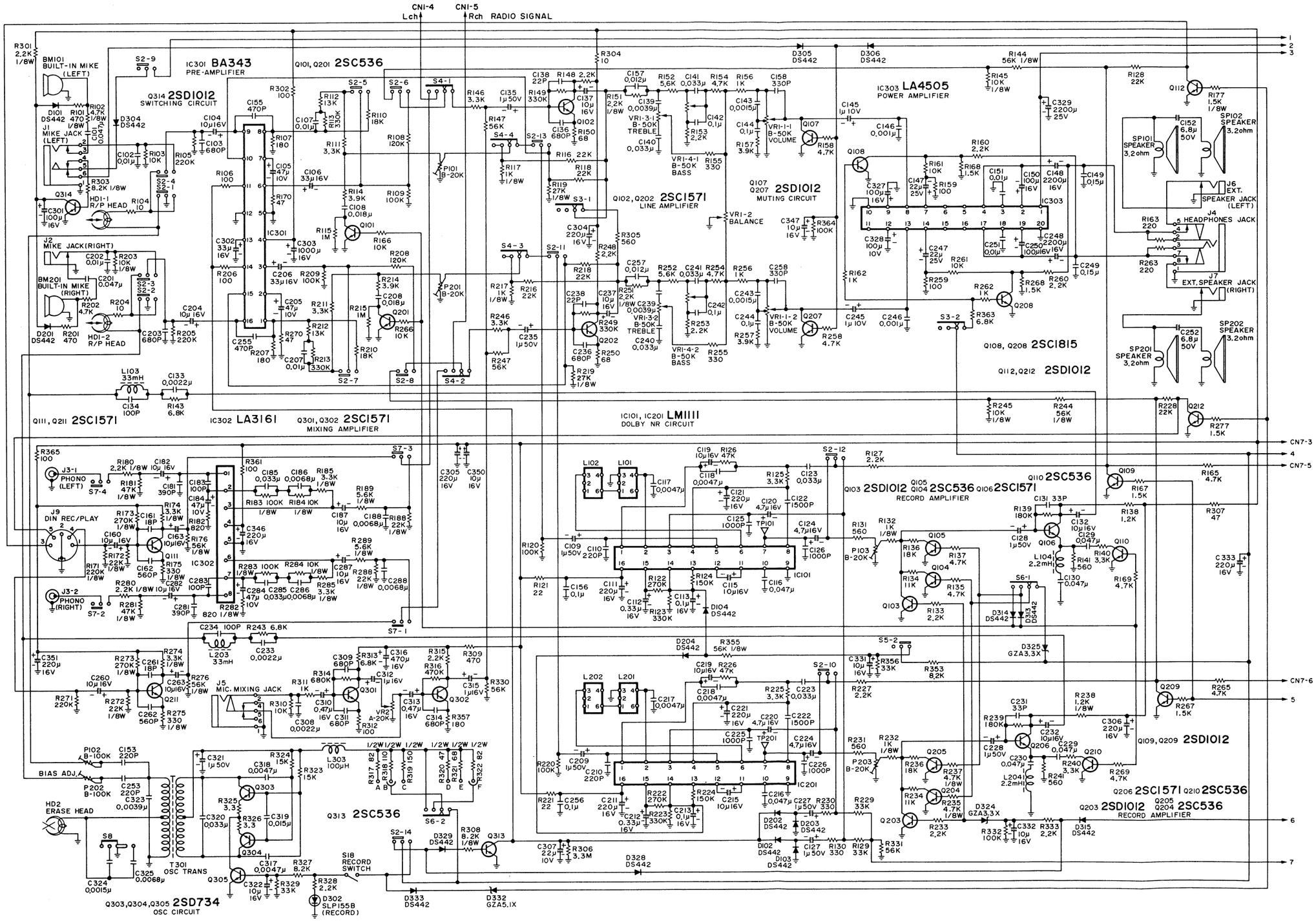
SCHEMATIC DIAGRAM (Tuner)



AMPLIFIER P.C.BOARD

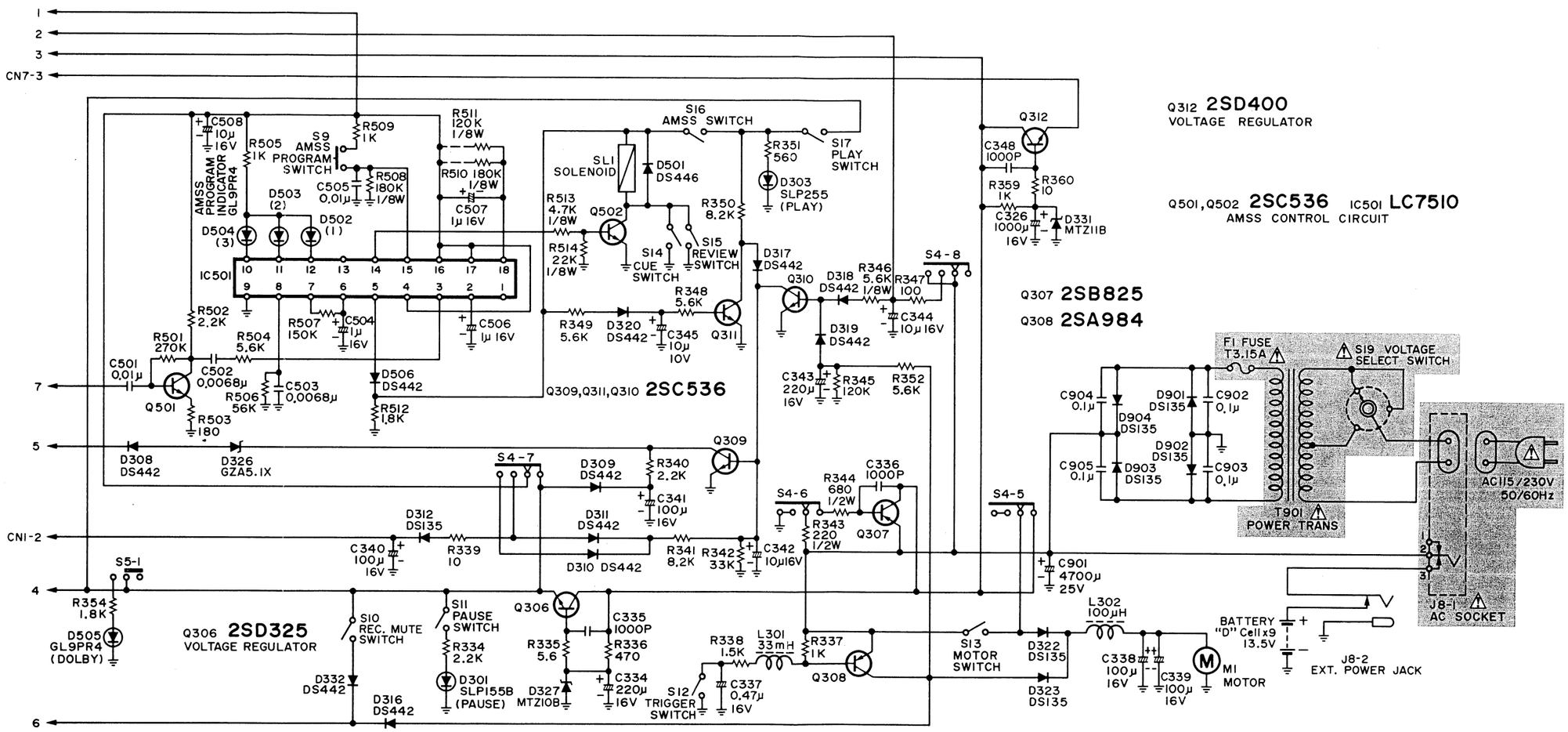


SCHEMATIC DIAGRAM (Amplifier)



No.	Name	Position
S1	Band Select Switch	FM
S2	Record/Play Switch	PLAY
S3	Mode Switch	MONO
S4	Function Switch	OFF
S5	Dolby NR Switch	OFF
S6	Tape Select Switch	NORMAL
S7	Input Select Switch	DIN
S8	OSC Switch	1
S9	AMSS Program Switch	OFF
S10	Record Mute Switch	OFF
S11	Pause Switch	OFF
S12	Trigger Switch	OFF
S13	Motor Switch	OFF
S14	Cue Switch	OFF
S15	Review Switch	OFF
S16	AMSS Switch	OFF
S17	Play Switch	OFF
S18	Record Switch	OFF
S19	Voltage Select Switch	230V

SCHEMATIC DIAGRAM (Control)



PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF AN UNIT. COMPONENTS INDICATED BY A MARK ⚠ IN THIS SCHEMATIC DIAGRAM SHOW COMPONENTS WHOSE VALUE HAS SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS SPECIFIED ON THE ATTACHED PARTS LIST BE USED FOR COMPONENT REPLACEMENT POINTED OUT BY THE MARK.

WIRING DIAGRAM